

Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System in India to Face Challenges of GATS



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ICAR-APCESS PROJECT

Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System in India to Face Challenges of GATS

-Project Code No. 0182079

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November, 2006

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Citation : Soam, S.K. and R. Kalpana Sastry (2006). Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System in India to Face Challenges of GATS, ICAR-AP Cess project no. 0182079, NAARM, Hyderabad, India

2006, 304p+

Published by : Director
National Academy of Agricultural Research Management
(NAARM), Rajendranagar, Hyderabad- 500 030, India

Printed at : NAARM, Hyderabad, India

UDC : 330.19 SOA 06

First printed : November, 2006

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FORWARD

General Agreement on Trade in Services (GATS) is the important agreement of WTO that covers various kinds of services including educational services. India included educational services in her revised draft of service schedule in 2005. But visualizing the international scenario and WTO negotiations, the Academy took the steps in advance to identify the strategic approaches in higher agricultural education to face the challenges of GATS by taking up a ICAR funded AP Cess project. The project started in November 2004 with the project team consisting of Dr S.K. Soam, Senior Scientist and Dr R. Kalpana Sastry, Principal Scientist at the Academy.

I am glad to know that the project has taken up innovative steps for involving majority of Agricultural Universities (AUs) and significant number of faculty members in these AUs by conducting brainstorming workshops at AUs and collecting data and information from faculty members through identified nodal officers in these AUs. It's a matter of pride for the Academy and also for AUs that recovery of filled-in questionnaires was about 44 percent, some of the AUs have sent even more than 90 percent of filled-in survey questionnaires. Designing different questionnaires for faculty members, HoDs and Heads of colleges, and nodal officers was a strategic approach of project team, and it helped in collecting data from various stakeholder groups of AUs. The success of the project is attributed to the Vice Chancellors, Deans, Principals, HoDs and faculty members of the AUs. In the capacity of Director, NAARM, I place on record my sincere thanks and appreciation to them.

The project report has brought out several implications in various modes of service supply as defined under GATS. To take future actions the recommendations has been developed and listed as an action framework. I believe these recommendations would provide academic support in building the appropriate policy framework. I appreciate the team effort of the investigators towards careful planning and execution of the project and bringing out this valuable report. I trust that report will be useful in formulating suitable educational services strategy of the AUs.

NAARM, Hyderabad
January, 2007

(R.K. Samanta)
Director

Acknowledgements

The development of this study owes much to the encouragement and support provided by the education division of Indian Council of Agricultural Research (ICAR). We are indebted to Dr J.C. Katyal, former DDG (Edn), ICAR for his encouragement and wholehearted support to the project. We express our grateful thanks to Dr S. Prakash Tiwari, DDG (Edn) and DDG (crop sciences) for his constant support to the project. Dr Tiwari as a Director, NAARM and as an expert in WTO matters provided his invaluable guidance and unstinted support to this research study.

We express our profound thanks to Dr R.K. Samanta, who in his capacity as Director, NAARM and Joint Director (Trg), NAARM provided all kinds of technical guidance and administrative support. The project team is also grateful to Dr T. Balaguru, HoD (ARSMP) for his time-to-time interaction and overall supervision of the project progress. In this project lot of cooperation has been received from various agricultural universities, we are thankful to the Vice Chancellors of the concerned AUs for extending their kind support to the project. The project team also expresses its gratitude to Dr Dinesh Paliwal and Mr Madhukar Sinha, Director (s) at the Ministry of Human Resource Development, New Delhi and Dr Sudhanshu Bhushan, HoD, WTO cell, National Institute of Education Planning and Administration (NIEPA), New Delhi for their time-to- time support and suggestions.

As an extremely important activity of the project, the brainstorming sessions were conducted at eight AUs. These workshops has resulted into wonderful data, the whole credit goes to the participant faculty members from these AUs; therefore the invaluable contributions made by them is gratefully acknowledged. Special thanks are due to the nodal officers at these AUs, who made it possible to successfully conduct these sessions with highest level of participation from the faculty members. The project team expresses hearty thanks to- Dr K. Suhasini, ANGRAU, Hyderabad; Dr. M. Achuthan Nair, KAU, Thirussur; Dr.G.L.Bansal, CSK HPKV, Palampur; Dr. H. N. Atibudhi, OUAT, Bhubaneswar; Dr. G. Venkateshwarlu, CIFE, Mumbai; Dr. P. K. Shukla, veterinary university, Mathura; Dr. Rameshwar Singh and Prof. Surendra Singh, NDRI, Karnal and Dr.Y. Hari Babu,KVAFSU, Bidar. In addition to brainstorming workshops, we are thankful to them for their support in collecting the data through survey questionnaires and schedule of status information about their respective universities.

The nodal officers at other AUs provided great support in the form of collecting data through survey questionnaires and schedule of status information about their respective AUs. The project team is extremely thankful to these nodal officers namely- Dr P.K. Chakraborty, BCKV, Mohanpur; Dr Udit Narain, CSAUAT, Kanpur; Dr S.P. Kalyankar, MAU, Parbhani; Dr J.L. Dwivedi, NDUAT, Faizabad; Dr D.K. Sinha, RAU, Samastipur and Dr N. Ram Singh, CAU, Imphal. The project team is also thankful to other nodal officers for their contribution to the project.

Special mention is made for the highest level of cooperation received from some of the nodal officers, because their hearty efforts has resulted into the delivery of filled-in questionnaires to the extent of 80 percent and more, and even up to 91 percent in case of some of AUs. We are extremely thankful for

the contributions to the project made by- Dr. R.K. Grover, CCS-HAU, Hissar; Dr. H.S. Chawla, GBPUAT, Pantnagar; Dr. K.A. Khunt, GAU (J), Junagadh; Dr G.N. Patel GAU (A), Anand; Dr.Y. Hari Babu, KVAFSU, Bidar; Dr. Ramanath K Rahane, MPKV, Pune Campus; Dr. G. Venkateshwarlu, CIFE, Mumbai; Dr. K.A. Varghese, MPUAT, Udaipur and Dr. H. N. Atibudhi, OUAT, Bhubaneswar, Dr E.R. Patil, PDKV, Akola; Dr J.M. Talathi, Dr BSKKV, Dapoli. Special mention is also made of Dr G.L. Bansal, CSK-HPKV, Palampur, Dr. Rishendra Verma, IVRI, Izatnagar and Prof. Javed Musarrat, AMU, who made highly significant contributions in several ways including personal contacts, regular emails and quick replies.

Our colleagues at the Academy, Dr Jaganadham Challa, Dr N.H. Rao and Dr D. Rama Rao deserves special mention for their time-to-time academic support. The project needed lot of support from administration, which was provided in a very efficient way, the project team expresses gratefulness to Mr M. Suresh Kumar, CAO, Mr S.K. Pathak, former FAO at NAARM, Mr V.S. Subramanian, FAO, Mr P.P. Brahmaji, AAO, Mr Y. Shanker Rao, AAO, Mr C. Bagaiha, Mr P.G. Kohad, Mr M. Sridhar, Mrs Jhansi Laxmi, Mr P. Venkatesh, Mr P. Srinivas and other staff in administration and finance and accounts sections at NAARM. We express our thanks to Mr P. Namdev for designing the cover page and other artistic works, Mr Suryanarayan for data entry, Mr RVVS Praksh Rao (editor) and Mr Shekhar Reddy (Press) for their help in printing matters, and Mr Raghu and Mrs Vani (Director cell) for their secretarial help, and others who have contributed one or other way to the conduction of project activities.

The Research Associates and Senior Research Fellows in the project had been the backbone of the project; it was not possible to accomplish the task without their involvement and hearty support. We take this opportunity to thank Mrs. H.B. Rashmi, Mrs. B. Nirmala, Mr K. Ramakrishna and Ms Lavanya for their significant contribution to the project. Finally, we would like to thank all NAARM staff for their help.

NAARM, Hyderabad
January, 2007

S.K. Soam
R. Kalpana Sastry

Executive Summary

Under the aegis of AP CESS Project, a research study on “Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System in India to Face Challenges of GATS” was undertaken by NAARM to develop and to analyze the General Agreement on Trade and Services (GATS), the obligations of member countries and the mechanisms with respect to higher agricultural education system in India. The project aimed to develop recommendation domain after evaluating the potential risks and opportunities in trade in educational services with respect to- preparedness, commitments in service delivery and receiving service (*modus operandi* and country of interest) and capacity building in agricultural education system. The competitive advantages of Indian higher agricultural education system were also analyzed.

Though initially, India made no commitments under the Uruguay Round in higher education services, it included higher educational services in its Revised Offer in August 2005. Agricultural education, a major contributor to sustainable development and poverty alleviation, would be subjected to certain specific implications with respect to GATS. Higher education including agri-education in most countries is regulated by competent bodies under GATS it stands to be recognized as a service. However, application of GATS may subject agri-education to principles of trade liberalization, market access and equitable treatment to all member nations. There are apprehensions that in view of ambiguities in definitions and concepts such as ‘like services’ and little or no knowledge on the consequences of free trade in educational services and what is commercial or public service in education, there may be several disputes arising. Thus there is an urgent need to clarify these.

The methodology was developed through extensive literature search, intensive interaction and subsequent pilot testing in selected agricultural universities and deemed institutions. The methodology integrates the inputs from primary source (the academic faculty) and secondary sources to derive a strategy using its inherent strengths and turn the opportunities to gain competitive advantage in services like agricultural education. The techniques used in data collection are brainstorming, survey questionnaire, group discussions and personal interactions.

Global trade in higher education is large; it is estimated at more than US\$30 billion per annum. International student mobility amounts to a minimum of 3 percent of global services exports. The major exporters of education are USA, UK, Canada, New Zealand and Australia. For example during 2003, overseas students in Australia contributed to educational export worth AUS\$7.5 billion representing this sector as Australia's third largest service export. India and China are the major importers of education from USA, UK and Australia. Asia contributes 57 percent and 80 percent, while India contributes 13.9 percent and 11 percent of international students in USA and Australia respectively. Against this background, The Government of India prepared a consultation paper addressing several concerns related to GATS and its implication in higher education. The present study sought to address several of these in relation to agri-education.

India can benefit from GATS only if constraints are converted to opportunities through effective international collaborations coupled with an efficient marketing strategy in place. The financial constraints could be converted to financial gains if the quality of education is raised and infrastructure of international standard is created in the AUs. In order to attract foreign students, especially from developing nations of Asia and Africa, special financial incentives in the form of scholarships, grants, loans and liberal work permits would enhance the number of international students in the campuses of AUs. But limitations imposed by poor websites of the AUs in India can be a severe limitation. In the present study it was found that, out of the 38 AUs, only one could score the rank equal to the other universities in India, which are very well known for the large strength of the foreign students.

The cross border supply under mode-2 is an area where efforts need to be made by academicians in particular. The study indicated that several respondents were apprehensive on teaching agricultural subjects through distance education (DE), and the preparedness towards this was poor. If India has to be competitive member, it should gear up to meet this challenge at the earliest by focusing on the possible areas in agriculture, which can be developed in this mode. This would be an important tool to offset the competition coming from other countries in SE Asia.

1. Under mode of consumption abroad, the large number of English speaking faculty and the range of diversity available in plants, animals and climate is a

strength which can be capitalized to attract students even from developed nations through joint degree programs or twinning programs. This can be affected through several policy initiatives, at both domestic and international levels. The study identified include ranking and accreditation of Indian universities at national level, international system of recognition of qualification, and development of international standards in education, as available for goods covered under other agreements of the WTO as priority areas.

For commercial presence under mode 3 the study linkages and collaborations as the most important strategic issue, followed by marketing strategy and development of joint educational delivery systems with foreign universities. The most important method to achieve could be through Memorandum of Understanding (MoU) with foreign universities for research projects, mutual exchange of faculty and devising joint educational programmes outside the country. This could be further strengthened through development of informative websites, and publicity through exhibitions and seminars abroad, joint educational programs with foreign universities, initiation of the joint degree programs and twinning programs and distance education. As India is a net importer of education under this mode, institutions like UGC, ICAR and VCI need to play greater role in accreditation and quality assurance.

Foreign Directed Investments (FDI) may promote economic growth of a developing country; it is especially true when an absorptive capability of the advance technologies is available in the host country. Therefore policy in pursuance of GATS obligations must not hinder the infrastructure development of national education system. GATS does not differentiate between different kinds of higher education, but pre-implementation circumstances and post implementation effects on the society differentiate between other higher education and agricultural education, which has very high local content. Commitments must be debated and negotiated after careful scrutiny of issues related to balancing role of private and public sector, relevant horizontal and specific limitations, subsidies, scholarships and grants, education trade in bilateral and plurilateral political agenda, international system of recognition of qualification, and provisions for accreditation, protection of intellectual property rights and safeguard mechanisms for developing nations.

Several Action issues on training emerged from the needs assessment

1. Preferences of efforts and the choice of mode of delivery of service

- Among the mode-1, 2 and 3, from best interests of the AUs, the consumption abroad (Mode-2) must be the most preferred service supply, which will be in favor of AUs of the country, it follows the commercial presence (Mode-3), and cross border supply (Mode-1) must be the last choice.

2. Cross border supply: India as exporter

- Since willingness of initiating through DE was less, an extensive list of probable subjects needs to be prepared for the purpose. China, Taiwan, Hong Kong and Singapore are the major competitors

3. Cross border supply: India as importer

- Degrees through DE offered by foreign universities can reduce mobility of Indian students going abroad.
- Agriculture is a practical subject, colleges would be ready to support any foreign DE provider in various spheres such as theory classes, practical, examinations etc.

4. Consumption abroad: India as exporter

- Poor strategic infrastructure development, lack of marketing strategy, government policies, lack of initiatives by the university administration is the most important limiting factor contributing to less number of foreign students in their campuses
- Faculty members favour the reservation of the quota for international students.
- Postgraduate courses have the largest chances to attract foreign nationals. The important subjects are biotechnology (crop as well as animal sciences), horticulture (fruit sciences), aquaculture, agri-business management, farm machinery and power, food and nutrition, agronomy and tea husbandry.

- International students may be attracted to new courses on subjects that are not presently available in AUs. These subjects are sustainable agriculture & natural resources management, fashion technology, agro-biodiversity; the topmost subject in this category is bio-informatics.
- For attracting international students the AUs must aim the developing nations of Asia, and Africa.
- Marketing and publicity through web, media, advertisements abroad and Internet, in order of their importance must be the top priority in attracting international students. Infra-structural development and maintenance of educational standards and quality through accreditation, ranking or certification through reputed certification agencies would greatly help. Develop strategic linkages and collaborations; keep the provisions of scholarships, fellowships and assistantships for foreign students.
- Foreign students in AUs would boost the export of rural items such as traditional art/artifacts/music/rural technology and rural products from local region.

5. Consumption abroad: India as importer

- India is major student sender country; the preferred arrangement for sending students abroad is that ICAR can provide scholarship to talented students with certain terms of references. The second best options is that talented students should go under twining degree program of Indian and foreign universities (part in India and part in abroad).
- Develop center of excellence in those disciplines where students mostly go abroad

6. Commercial presence: India as exporter

- Strategic linkages and collaborations are more important than the marketing, but these two are most important to have significant commercial presence of AUs abroad
- The faculty members of AUs do not prefer setting up of branch campuses abroad rather they prefer joint educational delivery systems mainly in the mode of joint degree programs, the twinning programs are the second option.

7. Commercial presence: India as exporter

- Strategic linkages and collaborations must be the most important strategy, it is more important than the marketing strategy which must be the second priority followed by it.
- The best method of establishing abroad is the joint degree program between AU and a foreign university at its campus abroad, where faculties from AU go abroad to deliver part of their courses. The second option is a twining program between AU and a foreign university at its campus abroad, and students come to AU for partial fulfillment of degree. Setting up campuses abroad to be kept at low priority.
- Developing nations to be given highest priority for establishing the commercial presence to attract students from there. For joint and twinning program the preferred nations are the developed nations. It means collaborations and linkages would help in drawing students from developing nations. Among developed nations the highest preference to be given to high-income OECD countries (especially USA, UK and Australia). After high-income OECD countries, the second most important choice is developing nations of South Asia, and East Asia and Pacific (especially Thailand, China and neighboring countries such as Nepal, Srilanka and Pakistan).
- AUs have done the least effort in establishing the commercial presence abroad, therefore the efforts to be done in a larger way. One approach is Promotion of Indian Higher Education Abroad (PIHEAD) project of UGC, either AUs may be the part of this program or ICAR can initiate its own program on the similar lines.

8. Commercial presence: India as importer

- A twining program between a foreign university and AU at its campus, a joint program between a foreign university and AU at its present campus, where official representatives from abroad come to deliver part of their courses at AU. Opening of campuses by foreign universities must be discouraged, as it will not be in the interest of the country.

9. Strategic linkages and collaboration

- Strategic linkages and collaboration also emerged as one of the major theme, and main sub-themes under this head are establishing counseling centers abroad, eliciting greater role of embassies/ consulates for linkages and mutual exchange of students.
- MoUs for research, exchange of faculty and students for joint educational programs, establishment of off shore campuses, role of NRIs, alumni and consulates and embassies is also of paramount significance.
- Invitations to faculty from abroad as a teaching faculty at AU must be encouraged in all forms such as regulatory measures, visa provisions and remuneration etc it will facilitate the linkages and collaborations. A foreign matters cell in the AUs can facilitate such kind of moves.
- Diversity in India is greatest strength, which can be used to foster the growth of linkages and collaborations

10. Policy and regulatory requirements

- Entry of foreign universities to be monitored and controlled through administrative and regulatory mechanisms, the most favoured would be procedural regulations such as registration, accreditation and monitoring by a national agency.
- International recognition of the degree, harmonization of national and international standards
- Market survey and networking to be facilitated as an instrument of preparedness
- Removing two most important weaknesses. Weaknesses in human resource such as the faculty members are not trained, they do not have international exposure, constraints in factors such as personality and motivation etc. equally important is the removal of system weaknesses related to day to day functioning of AUs.
- Certain threats to be looked into for getting the benefit of GATS. Most of the threats are not from foreigners but these are lying within self that is system threats prevailing in the country itself. Next to it is, threat to the diversity available in the country. Another severe threat is of faculty

shifting to foreign universities in their campuses in India or abroad, and it is also believed that those who will shift will be the gems of AUs.

- Poor international exposure of faculty members, the teachers to be given enough liberty encouragement and support to enhance their international exposure especially as an invited teaching faculty abroad.

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ABBREVIATION/ACRONYMS

University Acronyms

ANGRAU	Acharya N G Ranga Agricultural University, Hyderabad
GAU (A)	Gujarat Agricultural University, Anand
BCKV	Bidhan Chandra Krishi Vishwa Vidyalaya, Mohanpur
BAU	Birsa Agricultural University, Ranchi
CSAUA&T	C. S. Azad University of Agriculture and Technology, Kanpur
CCS-HAU	Ch Charan Singh Haryana Agricultural University, Hisar
CSK-HPKV	Ch. Sarwan Kumar Himachal Pradesh Krishi Vishwa Vidyalaya, Palampur
Dr BSKKV	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli
Dr PDKV	Dr. Panjabrao Deshmukh Krishi Vidyapeeth , Akola
GBPUA&T	Govind Ballabh Pant University of Agriculture and Technology, Pantnagar
IGKVV	Indira Gandhi Agricultural university, Raipur
JNKVV	Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur
GAU (J)	Gujrat Agricultural University, Junagarh
KVAFSU	Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar
KAU	Kerala Agricultural University, Thrissur
MPUAT	Maharana Pratap University of Agriculture and Technology, Udaipur
MPKV	Mahatma Phule Krishi Vidyapeeth, Rahuri
MAU	Marathwada Agricultural University, Parbhani
NDUAT	Narendra Dev University of Agriculture and Technology, Faizabad
OUAT	Orissa University Of Agriculture & Technology, Bhubaneswar
PAU	Punjab Agricultural University, Ludhiana
RAU (B)	Rajasthan Agricultural University, Bikaner
RAU (P)	Rajendra Agricultural university, Samastipur
SVBPUA&T	Sardar Vallabh Bhai Patel University of Agriculture and Technology, Meerut
TNAU	Tamil Nadu Agricultural University, Coimbatore
TANUVAS	Tamil Nadu Veterinary & Animal Sciences University, Chennai
UPPDVU	U. P. Pandit Deendayal Upadhyay Pashu Chikitsa -Vigyan Vishwavidyalaya Evan Go Anusandhan –Sansthan, Mathura
UAS(D)	University of Agricultural Sciences, Dharwad
CAU	Central Agricultural University, Imphal
NDRI	National Dairy Research Institute, Karnal
CIFE	Central Institute of Fisheries Education, Mumbai
IVRI	Indian Veterinary Research Institute, Izathnagar
AMU	Aligarh Muslim University, Aligarh
BHU	Banaras Hindu University, Varansi
GRI	Gandhigram Rural Institute, Gandhigram
SKUAST	Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu

Other Acronyms

ACVP	American College of Veterinary Pathologists
AEI	Australian Education International
AI	Artificial Insemination
AICTE	All India Council of Technical Education
AIT	Asian Institute of Technology
ANU	The Australian National University
AoA	Agreement on Agriculture
AU	Agriculture University
BD	Basic Data
BSc	Bachelor of Science
BVSc	Bachelor of Veterinary Science
CAGR	Compound Annual Growth Rate
CARP	Center for Agricultural Research Planning
CAZS	Centre for Arid Zone Studies
CIMMYT	Centro Internacional de Mejoramiento de Maíz y Trigo
CPC	Central Product Classification
CS	Case Study
DAAD	Deutscher Akademischer Austausch Dienst
DE	Distance Education
DEST	Department of Education, Science and Training
DFID	Department for International Development
ECE	Electrical and Computer Engineering
ES	Educational Services
FAO	Food and Agriculture Organization
FDI	Foreign direct investment
FIPB	Foreign Investment and Promotion Board
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GIS	Geographical Information System
GOI	Government of India
GRE	Graduate Record Examination
HoD	Head of the Department
HRD	Human Resource Development
IASc	Indian Academy of Sciences
ICAR	Indian Council of Agricultural Research
ICARDA	International Center for Agricultural Research in the Dry Areas
ICCR	Indian Council for Cultural Relations
ICM	Information and Communication Management
ID	International Data
IFCRTT	Indo-U.S. Forum for Cooperative Research and Technology Transfer
IFDC	International Fertilizer Development Center

IIM	Indian Institute of Management
IIT	Israel Institute of Technology
IIT	Indian Institute of Technology
IITA	International Institute of Tropical Agriculture
IMF	International Monetary Funds
IPR	Intellectual Property Rights
IQ	Intelligence Quotient
IRRI	International Rice Research Institute
IT	Information Technology
ITES	Information Technology Enabled Services
ITK	Indian traditional knowledge
ITO	International Trade Organization
LDC	Least Developed Countries
M.S	Master of Science
MA	Market Access
MFN	Most Favoured Nation
MoU	Memorandum of Understanding
MRA	Mutual Recognition Agreement
M.Sc	Master of Science
MSU	Michigan State University
MVSc	Master of Veterinary Science
NAARM	National Academy of Agricultural Research Management
NARS	National Agricultural Research Systems
NASSCOM	National Association of Software and Service Companies
NAU	Northern Arizona University
ND	National Data- secondary data
NFRI	National Food Research Institute
NGO	Non Government Organization
NIEPA	National Institute of Education Planning and Administration
NIH	National Institutes of Health
NIIT	National Institute of Information Technology
NIRD, UK	National Institute for Research in Dairying, United Kingdom
NP	National Policy
NREL	National Renewable Energy Laboratory
NRI	Non Resident Indians
NRI	Non Resident Indian
NRM	Natural Resource Management
NT	National Treatment
NZ	New Zealand
OECD	Organization for Economic Co-operation and Development
OSU	Ohio State University
PBGB	Plant Breeding, Genetics and Biotechnology
PG	Post Graduate

PhD	Doctor of Philosophy
PHT	Post Harvest Technology
PIHEAD	Promotion of Indian Higher Education Abroad
PIO	Persons of Indian Origin
PIO	Persons of Indian Origin
PND	Primary National Data
PSU	The Pennsylvania State University
QUT	Queensland University of Technology
R&D	Research and Development
RWTH	Die Leitseite der Rheinisch-Westfälischen Hochschule Aachen
SAARC	South Asian Association for Regional Cooperation
SAU	State Agricultural University
SESAM	Sustainable Energy Systems and Management
SPS	Sanitary and Phytosanitary Measures
STR	Student Teacher Ratio
SWOT	Strength-Weakness-Opportunity-Threats
TAMU	Texas A&M University
TBT	Technical Barriers on Trade
TCS	Tata Consultancy Services
TN	Tamil Nadu
TOEFL	Test Of English as a Foreign Language
TV	Television
UBC	University of British Columbia
UG	Under Graduate
UGC	University Grants Commission
UIUC	University of Illinois at Urbana-Champaign
UK	United Kingdom
UNAM	Universidad Nacional Autónoma de México
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America
USDA	United States Department of Agriculture
USEFI	United States Educational Foundation in India
VC	Vice Chancellor
VCI	Veterinary Council of India
WTA	World Trade Agreement
WTO	World Trade Organization

Chapter

1



Introduction of GATS and its Implications

Chapter 1

Introduction of GATS and its Implications

1.1. GATT, WTO and GATS

The international negotiations on trade in goods finalized with evolution of General Agreement on Tariffs and Trade (GATT) in 1947, it was effort of a small group of the world's major trading powers. GATT was originally envisaged as part of the International Trade Organization (ITO), the third pillar in the Bretton Woods Institutions together with the World Bank and IMF. GATT mainly was instrument of controlling international trade through tariff controls and regulations, later thinking started on multilateral system with the emphasis on regulating trade in services, and also the content of intellectual property systems in goods and services. Therefore Uruguay Round started in 1986 ended in 1994 with the establishment of World Trade Organization (WTO) through Marrakesh agreement on 15th April 1994, which came into enforcement from 1st January 1995¹. Besides World Trade Agreement (WTA or Marrakesh agreement), the WTO consisted of various other multilateral agreements on goods, services, intellectual property, dispute settlement and trade review mechanisms; GATT 1947 modified into GATT 1994 and became the part of Annex IA.

Fig 1.1: Structure of WTO

Establishment of WTO	World Trade Agreement (Marrakesh Agreement)- 15 April 1994		
	Enforcement: 1 st January 1995		Members: 150
Major elements	Goods	Services	Intellectual Property
Annexure-I	Annex I A Multilateral Agreements	Annexure I B GATS	Annexure I C TRIPS
Agreements			
Contents	Agreements: GATT-94, AoA, SPS, TBT, SCM, AD etc	Service annexure	Details of protection of various forms of Intellectual Property
Annexure-II	Agreement on Dispute Settlement Procedures		
Annexure-III	Agreement on Trade Policy Review Mechanisms		
Annexure-IV	Plurilateral agreements such as government procurement, air craft purchases etc. Not constituent element of main framework		

For the services, General Agreement on Trade in Services (GATS) was included as Annex IB of WTO agreements. WTA and Annex I to Annex III are the main framework of WTO (Fig 1.1), the member country do not have any other option than to accepting all

¹ As per provisions of WTO, the enforcement dates vary with respect to various agreements and also with respect to developed, developing and least developed nations.

these agreements, Annex IV consist of plurilateral agreements between signatory countries and it is not binding on to other WTO members.

1.2. General Agreement on Trade in Services

General Agreement on Trade in Services (GATS) is the first set of multilateral rules (annex IB) covering international trade in services. GATS covers 12 core service sectors² that are further subdivided into 160 sub sectors; education is one of the core sectors, which is categorized into five sub-sectors as per United Nations Central Product Classification (CPC), 1991. The sub-sectors in education are primary education services- CPC 921, secondary education services-CPC 922, higher education services-CPC 923, adult education services-CPC 924 and other education services-CPC 929 (see Box 1.1). The purpose of GATS is to reduce or eliminate barriers to trade in services and ensure increased transparency and predictability of relevant rules and regulations.

Box 1.1: Important definitions in educational services

Higher education:

CPC 92310: Post-secondary, technical and vocational education services: Post-secondary, sub-degree technical and vocational education services. Such education services consist of a great variety of subject-matter programmes. They emphasize teaching of practical skills, but also involve substantial theoretical background instruction.

CPC 92390: Other higher education services: Education services leading to a university degree or equivalent. Such education services are provided by universities or specialized professional schools. The programmes not only emphasize theoretical instruction, but also research training aiming to prepare students for participation in original work.

Adult education:

CPC 924: Adult education services n.e.c: Education services for adults who are not in the regular school and university stem. Such education services may be provided in day or evening classes by schools or by special institutions for adult education. Included are education services through radio or television broadcasting or by correspondence. The programmes may cover both general and vocational subjects. Services related to literacy programmes for adults are also included. Exclusion: Higher education services provided within the regular education system are classified in subclass 92310 (Post-secondary technical and vocational education services) or 92390 (Other higher education services).

Other education services:

CPC929: Education services at the first and second levels in specific subject matters not elsewhere classified, and all other education services that are not definable by level. Exclusions: Education services primarily concerned with recreational matters are classified in class 9641 (Sporting services). Education services provided by governess or tutors employed by private households are classified in subclass 98000 (Private households with employed persons).

² Please refer WTO service sectoral classification list ‘MTN.GNS/W/120’.

Therefore the central idea is that progressive liberalization of trade in commercial services will promote economic growth in the WTO member countries.

1.2.1. Modes of service supply

The services under GATS can be supplied through four modes. These modes are known as Mode-1, Mode-2, Mode-3 and Mode-4 as given in Table 1.1.

Table 1.1. : Modes of service supply available as per GATS provisions

Modes and Definition Under GATS Art I: 2	Common Phrase Used	Interpretation in Terms of Educational Services
1. Supply of a service from the territory of one Member into the territory of any other Member	Cross border supply	Distance education through print/electronic or internet media and virtual university etc. (Programme mobility)
2. Supply of a service in the territory of one Member to the service consumer of any other Member	Consumption abroad	Students go to other countries to receive education. (Student mobility)
3. Supply of a service by a service supplier of one Member, through commercial presence in the territory of any other Member	Commercial presence	Off-shore and satellite campuses and branches, franchise, joint degree and twinning programs, physical presence of office or official representatives (Institutional mobility as per Art XXVIII: d)
4. Supply of a service by a service supplier of one Member, through presence of natural persons in the territory of any other Member	Presence of natural persons	Temporary movement of professors to other countries for delivery of courses etc. (Academic mobility)

1.2.2. Agriculture related other services covered under GATS

Higher education is main concern in agriculture, but as per GATS provisions, certain other services as listed in table 1.2 are also covered in the agreement. The contractual service suppliers or independent professionals may provide these services. Therefore the higher education issues must be dealt in such a way that these addresses the other agriculturally important services likely to be covered under the agreement.

1.3. Members' obligations under GATS

Market Access (MA) and National Treatment (NT)³ under various modes of service supply are generally applicable obligations in GATT, but for GATS these apply on a

³ According to Art XVII, NT means “no less favourable” treatment must be accorded, and MA means a quota free entry without any trade distortive measures. Mattoo (1997) describes that Article XVII prohibits both *de jure* (formal) and *de facto* (denying market access to some countries) discrimination.

Table 1.2: Agricultural/ farming services covered under GATS

S.N.	Service name	UN classification code (CPC)
1.	R&D services on natural sciences	851
2.	R&D services on social sciences and humanities	852
3.	Interdisciplinary R&D services	853
4.	Insect and rodent control	940
5.	Environmental services	9401-3
6.	Statistical analysis, Cost and benefit analysis	86501
7.	Technical testing and analysis services <ul style="list-style-type: none"> • NRM studies • Soil testing • Pathogen testing • Environmental impact assessment • Chemical and biological studies 	8676
8.	Retailing services, and grading of goods	631
9.	Advisory and consulting services in agriculture	8812
10.	Advisory and consulting services in forestry and forest management-forest tree planting, seedling production/transplanting, tree breeding services, tree thinning services	8814
11.	Advisory and consulting services in fisheries	882
12.	Veterinary services	93201
13.	Storage and warehousing	742
14.	Franchising	8929
15.	Protection of biodiversity and landscape	9406
16.	Non-life insurance such as crop insurance	--

sector-by-sector basis and only to the extent that no limitation has been listed in schedules; therefore these are conditional obligations. Most Favoured Nation (MFN) clause in Art II laid out the general obligations at part of members, irrespective of commitments made or not in a particular service sector. These are the obligations for not to discriminate between fellow WTO members, therefore known as unconditional obligations. Basic principles are favour one favour all, access denied to one denied to all, and concessions agreed between large trading partners extend to all WTO members.

1.3.1. Most-Favored Nation (MFN) Treatment

MFN means that each Member country must give an equal and consistent treatment to all other foreign trading partners. WTO describes this as 'favor one favor all', 'access denied to one denied to all', and concessions agreed between large trading partners extend to all WTO members. Under Article II of the GATS, Members are held to extend immediately and unconditionally to services or service suppliers of all other members, "treatment no less favorable than that accorded to like services and service suppliers of any other country". This amounts to a prohibition, in principle, of preferential

arrangements among groups of members in individual sectors or of reciprocity provisions. Limited exemptions to MFN are permitted as per procedure laid down under Art II: 2 and Art V *bis* of GATS, and Art IX of Marakesh Agreement⁴.

1.3.2. National Treatment

A commitment to national treatment implies that the member concerned does not operate discriminatory measures benefiting domestic services or service suppliers. It refers to equal treatment for foreign and domestic providers. Once a foreign supplier has been allowed to supply a service in another country there should be no discrimination in treatment between foreign and domestic providers. It applies where a country has made a positive specific commitment. Non-conforming measures can be retained in scheduled sectors/modes of supply, as national treatment does not require identical treatment of domestic and foreign providers, but its specification must be clear. These sector specific obligations apply to commitments listed in national schedules. Each member determines the degree and extent of obligation.

1.3.3. Market Access

Market access focuses primarily on non-discriminatory quantitative restrictions impeding access to markets. Each member of GATS determines limitations on market access for each committed sector. Restrictions might be imposed on number of service suppliers, value of transactions and service operations etc; these can be sector specific limitations or horizontal limitations (Article XVI: 2).

1.3.4. Domestic Regulations

As far as domestic regulation is concerned, Article IV: 1 provides that in sectors where specific commitments are undertaken, each member shall ensure that all measures of general application affecting trade in services are administered in a "reasonable, objective and impartial manner". Where authorization is required, the competent authorities of a member shall respond quickly (Article IV: 3). Further more, Article IV: 5 requires that licensing and qualification requirements do not nullify specific commitments.

Each member makes commitment in a services schedule, which is an undertaking to provide market access and national treatment for the service activity in

⁴ Marakesh Agreement is also known as World Trade Agreement, it is the Agreement on setting up of WTO.

question on the terms and conditions specified in the schedule. When making a commitment a government therefore binds the specified level of market access and national treatment and undertakes not to impose any new measures that would restrict entry into the market or the operation of the service. Specific commitments thus have an effect similar to a tariff binding — they are a guarantee to economic operators in other countries that the conditions of entry and operation in the market will not be changed to their disadvantage. The national schedules all conform to a standard format, which is intended to facilitate comparative analysis. For each service sector or sub-sector that is offered, the schedule must indicate, with respect to each of the four modes of supply, any limitations on market access or national treatment, which are to be maintained. In nearly all schedules, commitments are split into two sections⁵: First, “horizontal” commitments which stipulate limitations that apply to all of the sectors included in the schedule; these often refer to a particular mode of supply, notably commercial presence and the presence of natural persons. Any evaluation of sector-specific commitments must therefore take the horizontal entries into account. In the second section of the schedule, commitments, which apply to trade in services in a particular sector or sub sector are listed. A "none" entry against a particular mode of supply with respect to market access means full commitment and denoting the absence of any limitation. An "unbound" entry against the relevant mode means no commitment. Partial commitments, which refer to, those entries conditioned in some way by a limitation.

1.4. Possible trade barriers in various modes

The GATS has the potential to remove major obstacles to the export and import of services. The possible trade barriers can be on different accounts, such as interpretation of definitions envisaged under GATS, various provisions of the agreement, regulatory measures put by member countries, and international harmonization of educational standards. With respect to the education services sector, certain barriers have been identified by the WTO including immigration requirements for students, foreign currency controls, the inability to obtain a national license (e.g. to be recognized as a degree/certificate granting educational institution), measures limiting direct investment by foreign education providers (e.g. equity ceilings), nationality requirements, needs tests, restrictions in recruiting foreign teachers and the existence of government

⁵ For details please refer to http://www.wto.org/english/tratop_e/serv_e/guide1_e.htm

monopolies and high subsidization of local institutions⁶. Obstacles to trade in education that have been cited by the U.S. Department of Commerce include⁷:

- Legislation that discriminates against foreign providers (e.g., requirement of majority local ownership).
- Licensing requirements unique to external providers.
- Accreditation or quality assurance standards that differ from those for local providers; little or no access to local accreditation.
- Customs duties for educational material that crosses borders.
- Taxes (in excess of local competitors) on earnings or limitations on repatriation of profits.
- Government red tape for foreign providers.
- Subsidies for local providers not available to foreign providers.
- Citizenship requirements in order to teach or offer certain subjects.
- Telecommunications restrictions on foreign access to the Internet or phone service.
- Visa and other travel restrictions on foreigners that affect education.

Saner and Sylvie Fasel (2003) also describes various possible trade barriers (Box 1.2). For consumption abroad, there may be direct restrictions in the form of immigration requirements and foreign currency controls, or indirect restrictions such as translating degrees obtained abroad into national equivalents and accreditation of qualification. Though its true that many trans national companies do not strongly rely on formal certification and/or recognition. With respect to establishing commercial presence, potential barriers include the inability to obtain national license, measures limiting direct investment by foreign education providers (e.g. equity ceilings), nationality requirements, needs tests, restrictions on recruiting foreign teachers, non-recognition of university for various purposes including student welfare.

⁶ The GATS and Higher Education in Canada, An Update on Canada's Position and Implications for Canadian Universities, 2003, available at http://www.aucc.ca/_pdf/english/reports/2003/gats_update_e.pdf

⁷ Overview of Higher Education and GATS, available at <http://www.acenet.edu/programs/international/gats/overview.cfm>

Box 1.2: Possible trade barriers

Barriers to trade		Examples and modes of supply concerned
1	Prohibition for foreign providers	<ul style="list-style-type: none"> No possibility for foreign supplier to offer its services (all modes of supply).
2	Administrative burden and lack of transparency	<ul style="list-style-type: none"> Domestic laws and regulations unclear and administered in unfair manner (all modes of supply); When governmental approval required for foreign suppliers, extremely long delays encountered; when approval denied, no explication given, no information about necessary improvements to obtain it in the future (all modes of supply); Denial of permission for private sector suppliers to enter into and exit from joint ventures with local or non-local partners on a voluntary basis (Modes 1 and 3).
3	Fiscal discrimination	<ul style="list-style-type: none"> Subsidies for education are not made known in a clear and transparent manner (all modes of supply); Repatriation of earnings is subject to excessively costly fees and/or taxes for currency conversion (all modes of supply); Excessive fees/taxes imposed on licensing or royalty payments (Modes 1 and 3).
4	Accreditation/recognition discrimination	<ul style="list-style-type: none"> No recognition of titles delivered by foreign providers (all modes of supply); No recognition of foreign diplomas (Mode 2); No accreditation delivered nationally for foreign providers (Modes 1 and 3).

Source: Saner and Sylvia Fasel 2003

1.4.1. Article I (3): Concept of Services

As per Art I: 3 (b) “services includes any service in any sector except services supplied in the exercise of governmental authority” these services are defined under Art I: 3 (c) as “a service supplied in the exercise of governmental authority means any service which is supplied neither on a commercial basis, nor in competition with one or more service suppliers”. Meaning of Art I: 3 is most controversial and critical [Jane Knight, 2003], interpretation⁸ of I: 3 (c) is one of the main contentious issues to be solved by WTO negotiations [Saner and Fasel, 2003]. Certain other principles such as principle of logic and sense, principle of effective interpretation, and principle of ‘*in dubio mitius*’ described by Krajewski (2003) are also taken into consideration.

Authority is the notion of command and control through various kinds of decisions through legislative, regulatory and administrative measures. Scope of GATS is extended through progressive liberalization, public services (e g, fire service) today, may become private tomorrow, but private services also do not operate without government authority.

⁸ WTO Agreements are interpreted under the rules of the Vienna Convention on the Law of Treaties (Art 31-33); the basic norms provided under Art 31.1, states “treaty shall be interpreted ‘in good faith’ in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of the objectives and scope”.

The word “commercial” is used for activities related to commerce and trade; commerce means “exchange of goods through buying and selling” therefore related to profit seeking and non-profit activities both; trade means “a means of earning one’s living” therefore related to profit seeking activities. Public higher education system has both commercial and non-commercial basis because in attempt to make profit, at one hand the public universities charge higher fees from foreign students; on the other hand these universities subsidize education for domestic students through provisions of scholarships or fee waiver for the students of weaker sections of the society.

Competition means a situation where one producer targets the same market as at least one other producer; therefore understanding of “like services”⁹ and “like service suppliers”¹⁰ is very crucial. Its easy to differentiate between “unlike products” but very complex task in defining “unlike services” e g, one university provides education for fulfilling long term socio-economic goals, and another university provides education for fetching high salaried jobs in multi national companies; do both universities provide “like services”? On the other hand, it is easy to differentiate between “unlike products” under GATT. Moreover in Indonesia-Auto case¹¹ the relationship of GATT and GATS has been defined and panel observed that both are distinct and separate agreements. Mireille Cossy (2006) in her paper discusses the implications of the concept of “likeness” in the context of the national treatment obligation and with the combined reference to “like services and service suppliers”, as well as the relevance and role of the modes of supply in determining “likeness”. She also discusses whether “something different” could be envisaged under the GATS.

1.4.2. Article I (3): Concept of Like Services

Understanding of definitions is not important for selection of sector or level of limitations; rather it is important from the point of disputes, which are likely to occur in future, and interpretations of the provisions of Art I: 3 (b) and (c) would make great impact on WTO panel decisions. Czinkota and Ronkainen (2005) studied the likelihood of changes in the international environment over the next decade and the impact of these changes, and emphasize that higher education is not immune from rules of

⁹ Appellate Body in Japan-Alcoholic Taxes case (WT/DS8/R, 1996, Para 6.22 & 6.28) provide some directions to define “like product” under General Agreement on Tariffs and Trade (GATT).

¹⁰ WTO panel in EC-Banana case (WT/DS/27/R, 1997, para 7.311) upheld that to the extent that entities provide “like service” are “like service suppliers”.

¹¹ The details are available in WTO document ‘WT/DS/64/R, July 1998, Para 5.352’.

economics, particularly when it comes to issues of supply, demand, and money. If, India makes request for public education service suppliers. It would be easy to establish the service of a public university of country A and of country B as “like service”, but it would not be easy to establish the service of a public university of country A and a private university of country B as “like service” and thus “like service suppliers”. India therefore may have critical implications with respect to obligations under market access and national treatment, if commitments are made reciprocal to request. A comprehensive and comparative understanding of these implications are presented in Table 1.3.

Table 1.3: Comparative analysis of public and private universities with respect to GATS

Element of Art I: 3 (b) and (c)	Public University	Private University	Comparative Obligations Under GATS
Government authority	Direct authority through ministries, departments and govt. organizations	Indirect authority through UGC, ICAR & VCI etc.	Both may be exempted from GATS coverage
Commercial basis-profit seeking activity	Yes	Yes	Both are covered under GATS
In competition criteria-same market segment	Yes	Yes	Both are covered under GATS
In competition criteria-like service: Common end use	Employment and knowledge generation	Employment and knowledge generation	Both are at par towards fulfilling the commitments under GATS
In competition criteria-like service: Substitution	Obligations to fulfill higher order social/national objectives and research capacity building	Mostly concentrate on profit oriented teaching and other activities	Both are not at par towards fulfilling the commitments under GATS
In competition criteria-like service: Market strategies	Mostly no investments	Aggressive marketing coupled with well defined marketing strategies	Both are not at par towards fulfilling the commitments under GATS

1.4.3. Mutual Recognition Agreement (MRA) and Economic Needs Test

Article VI (4) of GATS clearly mention about qualification requirement as given below

“With a view to ensuring that measures relating to qualification requirements and procedures, technical standards and licensing requirements do not constitute unnecessary barriers to trade in services, the Council for Trade in Services shall, through appropriate bodies it may establish, develop any necessary disciplines. Such disciplines shall aim to ensure that such requirements are, *inter alia*:

- (a) Based on objective and transparent criteria, such as competence and the ability to supply the service;

- (b) Not more burdensome than necessary to ensure the quality of the service;
- (c) In the case of licensing procedures, not in themselves a restriction on the supply of the service.”

Further Article VII (1) mention about the qualification recognition of the service suppliers;

“For the purposes of the fulfillment, in whole or in part, of its standards or criteria for the authorization, licensing or certification of services suppliers, and subject to the requirements of paragraph 3, a Member may recognize the education or experience obtained, requirements met, or licenses or certifications granted in a particular country. Such recognition, which may be achieved through harmonization or otherwise, may be based upon an agreement or arrangement with the country concerned or may be accorded autonomously”

Paragraph 3 of the above Article refers “A Member shall not accord recognition in a manner which would constitute a means of discrimination between countries in the application of its standards or criteria for the authorization, licensing or certification of services suppliers, or a disguised restriction on trade in services”

Therefore Mutual Recognition Agreement (MRA) is the crucial issue with respect to the possible trade barriers. The provisions in Art. VII that describes the modalities of the MRA, which must be seen along-with Art. VI on domestic regulation (Bagheri and Nakajima, 2002). Besides the set international standard of the recognition of the qualification, and provisions of the economic needs test must be addressed accordingly.

1.4.4. Harmonization of standards and recognition of qualifications

The other agreements of WTO, such as Sanitary and Phytosanitary Measures (SPS) and Technical Barriers on Trade (TBT) has the well defined structure of recognized international standards. But in case of GATS, no such internationally recognized instrument is available, which may lead to barriers such as non-recognition of qualifications. For recognition of qualifications, though several efforts have been made by various groups as listed below¹²:

¹² Taken from WTO document (S/C/W/49) page 17

- Regional Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in Latin America and the Caribbean. Mexico City, 19 July 1974.
- International Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in the Arab and European States Bordering on the Mediterranean. Nice, 17 December 1976.
- Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in the Arab States. Paris, 22 December 1978.
- Convention on the Recognition of Studies, Diplomas and Degrees concerning Higher Education in the States belonging to the Europe Region. Paris, 21 December 1979.
- Regional Convention on the Recognition of Studies, Certificates, Diplomas, Degrees and other Academic Qualifications in Higher Education in the African States. Arusha (Tanzania), 5 December 1981.
- Regional Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in Asia and the Pacific. Bangkok, 16 December 1983.
- Convention on the Recognition of Qualifications concerning Higher Education in the European Region, Lisbon, 11 April 1997.

1.4.5. Economic Needs Test

With regard to restriction on market access on the basis of economic needs tests, the Article XVI (2) make a mention as given below;

“In sectors where market-access commitments are undertaken, the measures which a Member shall not maintain or adopt either on the basis of a regional subdivision or on the basis of its entire territory, unless otherwise specified in its Schedule, are defined as:

- (a) Limitations on the number of service suppliers whether in the form of numerical quotas, monopolies, exclusive service suppliers or the requirements of an economic needs test;
- (b) Limitations on the total value of service transactions or assets in the form of numerical quotas or the requirement of an economic needs test;
- (c) Limitations on the total number of service operations or on the total quantity of service output expressed in terms of designated numerical units in the form of quotas or the requirement of an economic needs test;

(d) Limitations on the total number of natural persons that may be employed in a particular service sector or that a service supplier may employ and who are necessary for, and directly related to, the supply of a specific service in the form of numerical quotas or the requirement of an economic needs test”

The necessity test or economic needs test is an important domestic regulation, but there is a practical complexity in defining the legitimate objectives of the test. The limitations of these tests must be seen under the WTO ruling in ‘Gambling dispute case’. In the recent WTO talks, the removal or substantial reduction of economic needs tests has been discussed (WTO document WT/MIN (05)/DEC). But it would have serious concerns on the stand of developing nations.

1.5. Schedule of GATS commitments

The Request-offer¹³ approach is the main method of negotiation, the negotiations started under Article XIX of the General Agreement on Trade in Services on January 2000. Para 15 of Doha Declaration sets out specific deadlines for the services negotiations. January 2000: 30 June 2002: Initial requests to open service sectors. Requests can be made in any service sector, and can be submitted at any time during the negotiations through the end of 2004.

- 31 March 2003: Deadline for WTO members to make their *initial* offers to expand the reach of the GATS by indicating the additional specific commitments they are prepared to make.
- September 2003: GATS negotiations in Mexico.
- 1 January 2005: Conclusion of the current round of WTO/GATS negotiations, including those to expand the GATS. Initial requests and offers will continue until this date.

The end date of the Doha round was originally planned for January 1, 2005. The negotiations could not be completed by this date. Therefore the date has been extended given the significant delays in the tabling of both requests and offers. The

¹³ For Guidelines and Procedures for the Negotiations on Trade in Services refer WTO document no. S/L/93, available at www.wto.org

next Ministerial meeting held December 2005 in Hong Kong. The negotiations could not be finalized even up to July 2006, further rounds will occur.

1.5.1. Commitments in education by various countries

Education, overall, is one of the least committed sectors. Only 44 of the 150 WTO Members have made commitments in education, and only 21¹⁴ of these have included commitments to higher education. Only 4 countries have submitted a negotiating proposal outlining their interest and issues in the education sector. These countries, in order of presentation of negotiating proposals are: United States, New Zealand, Australia, and Japan. In terms of specific commitments, the European Union has included higher education in its schedule with clear limitations on all modes of trade except consumption abroad, which generally means foreign fee paying students. After Hong Kong conference, plurilateral negotiations emerged as the new approach of requests and offer. As a plurilateral request, New Zealand and Australia made a request to India. India must also make a group for the purpose of plurilateral request to the developed nations; this approach offers various benefits as listed below

- Less expenditure is involved on negotiations,
- Several countries of similar interests from various continents can put up the proposal to one country; it enhances the bargaining power,
- Less economically developed nations can get collective bargaining benefit and
- Developed nations can make the strong group, which can be a difficult situation for developing nation at individual level.

India had no commitments under the Uruguay Round in higher education services however, hundred percent FDI (foreign direct investment) in higher education services on automatic route is allowed in India. Also, foreign participation through twinning, collaboration, franchising, and subsidiaries is permitted¹⁵. India has received

¹⁴ Australia, Czech Republic, Jamaica, Liechtenstein, Norway, Sierra Leone, Switzerland, Congo RP, European Community, Japan, Mexico, Panama, Slovak Republic, Trinidad and Tobago, Costa Rica, Hungary, Lesotho, New Zealand, Poland, Slovenia, Turkey. WTO, Education Services: Background Note by the Secretariat, September 1998, available at <http://www.wto.org>; also see document no. S/C/W/4998-3691 of Council of Trade in Services).

¹⁵ Taken from consultation paper prepared by trade policy division, Department of Commerce, Ministry of Commerce.

requests from several countries like Australia, Brazil, Japan, New Zealand, Norway, Singapore, and the US. India included education in its revised offer during August 2005¹⁶ (Table 1.4).

Table 1.4: India's schedule of commitments for higher education

Mode	Limitations on market access	Limitations on national treatment
Mode-1	None subject to condition that service providers would be subject to regulations as applicable to domestic providers in the country of origin	None
Mode-2	None	None
Mode-3	None subject to the condition that fees to be charged can be fixed by an appropriate authority and that such fees do not lead to charging capitation fees or to profiteering. Subject further to such regulations, already in place or to be prescribed by the appropriate regulatory authority. In case of foreign investors having prior collaborations in that specific service sector in India, FIPB approval would be required.	None
Mode-4	Unbound except as in the horizontal section	Unbound except as in the horizontal section

1.6. Scenario of higher agricultural education in India and specific implications

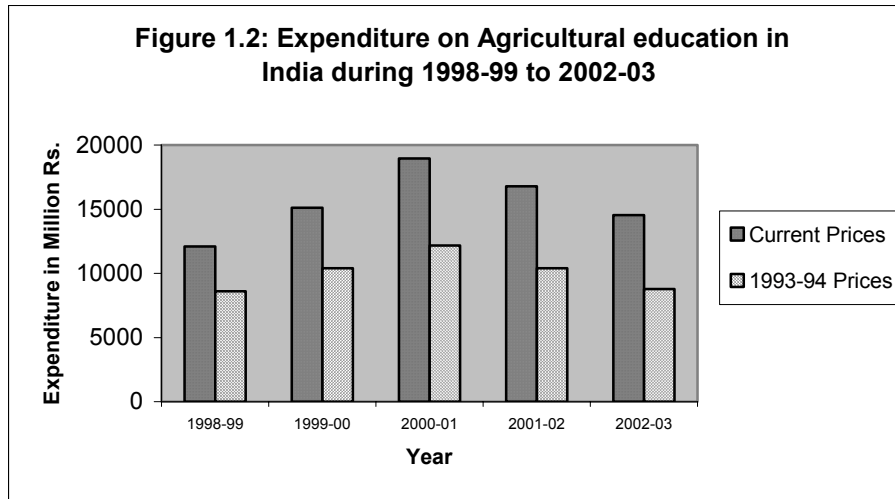
1.6.1. Higher agricultural education in India

Today the National Agricultural Education System consists of 33 State Agricultural Universities and 6 State Veterinary Universities with 210 constituent colleges, one Central Agricultural University with 6 colleges, five deemed universities with 10 colleges, 3 central universities with faculty of agriculture, 16 non-agricultural state universities having around 41 affiliated agricultural colleges and one IIT with a faculty in agricultural engineering. There is no private university in the agriculture, two private veterinary colleges are available but one (at Jaipur) has not been given recognition by the Veterinary Council of India (VCI).

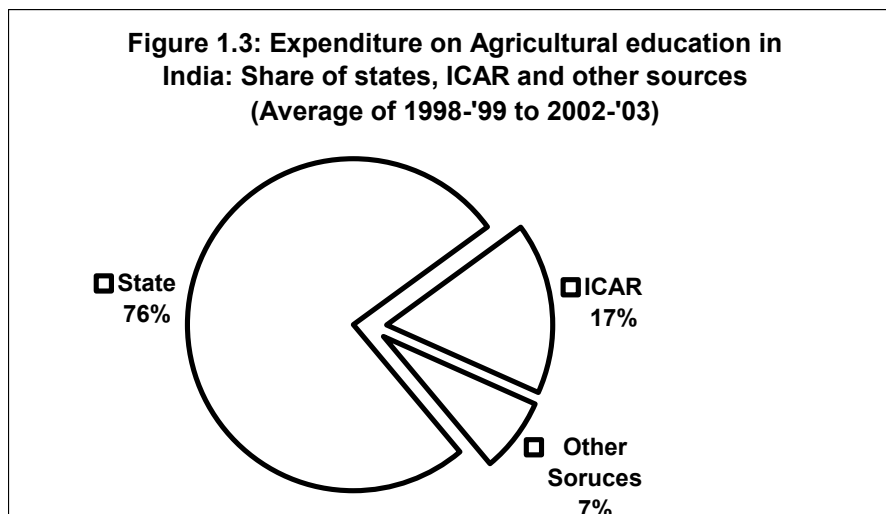
The expenditure on agricultural higher education during 98-99 to 2002-03 data are presented in figure 1.2, the expenditure varied from Rs 1210 crore during 98-99 to Rs 1454 crore during 2002-03, the peak was during 2000-01 which was around Rs 1896. The important things to be mentioned here is that on 93-94 prices these

¹⁶ For details in horizontal section please see the WTO Document TN/S/O/IND/Rev.1* dated 24 August 2005

expenditures are quite low when compared with the current price level; the expenditures from various sources are decreasing from 2000-01 onwards, the another important feature is that except 2000-01 there was no quantum jump in expenditure, the growth of expenditure (allocations) have been slow and steady. As the case of total education sector in India, the expenditure on the higher agricultural education is mostly born by the state governments (Fig 1.3).



Compiled by authors based on the information published in Agricultural Research Data Book 2004, IASRI



Compiled by authors based on the information published in Agricultural Research Data Book 2004, IASRI

1.6.2. Specific implications of GATS to higher agric. education

As per seventh schedule of Constitution of India, agriculture including education and research is the state subject, while education including technical and medical education is in the concurrent list. An added fact is that some central universities like Banaras Hindu University, Aligarh Muslim University, Visva Bharati, and institutes of national importance i.e., IIT, Kharagpur have agricultural faculty and these are in Union List. The Central University of Agriculture (CAU, Manipur), Allahabad Agricultural Institute and four ICAR institutes are deemed to be universities, which are governed by the Central Government; veterinary universities are regulated by Veterinary Council of India (VCI), which is a statutory authority. Also, there are 16 non-agricultural state universities, which have agricultural faculty and 41 affiliated agricultural colleges. The Indian Council of Agricultural Research (ICAR) plays its role in supporting, guiding and coordinating State Agricultural Universities (SAUs) and other universities. University Grants Commission (UGC) regulates all the central universities and non-agricultural state universities. UGC, VCI and ICAR are government organizations but unlike others, ICAR is a non-statutory body thus no government authority. Both Central and State governments have stakes in agricultural education but the major controlling authority lies with the state governments because there are 39 SAUs including six veterinary universities, others are either DUs or ICAR institutes controlled by Central Government. Therefore any measures by central and state governments related to quantitative restrictions, or registration requirements by statutory authorities such as UGC and VCI would have “an effect on trade in services”. The measures such as curriculum design, student welfare, infrastructure development, delivery methods, strategic controls through fund provisions and administrative procedures by ICAR would mainly have effect on “internal supply of service”. Obligations must also be seen in the context of India’s commitments for other agriculturally related services as explained in table 1.2. Some examples of possible inconsistencies of interpretations on “like services” related to agricultural education are given below.

1.6.2.1. Training in a Foreign country and Professional practice in India

A veterinary graduate, including an Indian citizen trained in country A, is denied registration with VCI but is registered if trained in country B. This discrimination is a *de facto* measure because graduates trained in country B may be more suited to Indian

needs, and the examination system of country B may be more reliable. Is this inconsistent with MFN, MA and NT? Mattoo (1999) suggests that this is consistent with GATS provisions because:

1. Both foreigners and Indian citizens have access to universities in country A and B,
2. Even Indian citizens trained in country A are not registered.

It can be argued, however, that these provisions are not in accordance with GATS provisions, as students trained in country A are being denied registration. But it will not be inconsistent with MFN provisions if limitations are placed in specified schedules. In India, the National Board of Examination of the Ministry of Health conducts a screening test for Indian nationals obtaining medical qualification from abroad; for clinical practice they are registered with Medical Council of India (MCI) only after qualifying this particular screening test (www.natboard.nic.in). If VCI adopts the similar practice for registration of veterinary graduates trained abroad in any country, then it is a *de jure* measure and consistent with NT and MFN.

1.6.2.2. Discrimination in Admissions for Higher Degree

For admissions to post-graduate degree courses, differential treatment for equivalence of qualifying degrees by some countries is well known. In India, a basic qualification for the M.Sc. in Agriculture is the B.Sc. (Agri.), a four-year degree course. If a foreign student who has a basic degree of less than four years and is therefore refused admission to Indian agricultural universities, is this inconsistent with NT and MFN?

1.6.2.3. Services of EduSat:

Recently the Government of India launched an Educational Satellite called “EduSat” for public universities on highly subsidized rates for education and training. The agricultural universities can use its services in such a way that it helps agricultural development at the grass root level. Similarly a foreign university with a commercial presence in India may demand services of “EduSat” at the same price to provide distance education in those subjects that lead to highly remunerative jobs in the labour market. If demand by foreign universities is not acceded to, is it inconsistent with principle of MA and NT? One has to decide whether both are like services or not.

1.6.2.4. Special Funds for Infrastructure Development

When Central and State governments strengthen the infrastructure of agricultural universities, for example library, information and communication through grants and subsidies, will it create a situation of unfair competition in trade? And is it against the principle of granting equal opportunities to compete?

1.6.2.5. Subsidies for Private and Public Universities

GATS does not define subsidies (WT/DS 64/R, 1998, para 5.158). Demands by private universities for subsidies similar to public agricultural universities may not be met because India has not committed to private education services. Universities such as Deakin University and the University of Melbourne in Australia, which also have private arms, must not be treated identical to public universities. Private universities are covered under service tax provisions in India. Will the tax provisions be also applicable to the Indian branches of foreign universities?

1.6.2.6. Government Regulations

The regulatory measures on AUs enforced by ICAR would mostly influence the “internal supply”. But measures by VCI, UGC, and state governments may affect “trade in services”. If limitations are not placed on the schedule of commitments then measures will be inconsistent with MA covered under GATS, if in any of the following categories:

1. Scholarships, grants, limiting the number of seats, number of branches of foreign university and foreign employees in these branches; applying a condition of employment to the local persons.
2. Asking foreign universities to register with ICAR/ VCI and prescribing conditions for the joint venture.

1.7. India's concerns

Rajan and Bird (2002) show that with respect to global trade in services, mode-3 is used for half of the service trade, mode-1 is used for one-fourth of service trade, mode-2 is used for one-fifth of service trade, and mode-4 is used for one percent of service trade. But the options of key stakeholders in India with regard to suitability of mode of service may be different. A mode wise analysis has been presented by Soam

et. al. (2007). Trade Policy Division of Department of Commerce, Govt. of India in its consultation paper of 2006 (Anonymous 2006) also raises several concerns as given below:

1. What are the areas of potential for expanding education services in India? Are we in a position to meet these demands internally?
2. Whether India should allow Foreign Education Providers in a phased manner, after domestic reforms are in place or not at all?
3. What should be the way in which foreign educational institutions can deliver services in India: through a joint venture or a wholly owned subsidiary?
4. What would be the role of the UGC/AICTE and that of the regulatory body in the home country of the foreign education providers?
5. How would the issues of liability and student welfare be handled in cases involving foreign educational institutions?
6. What should be a logical response to the various requests made on India at the WTO under the on-going plurilateral negotiations? (The requests received include expansion of the coverage of higher education to include both postsecondary technical and vocational education services and other education services and removal of present market access limitations such as fees do not lead to charging capitation fees or profiteering etc.)
7. Whether negotiations under General Agreement on Trade in Services (GATS) could be used as an opportunity by India to attract investment in higher education and also explore export markets?
8. Whether efforts should be made to harmonize our licensing and qualification requirements and procedures to world standards so as to create linkages of higher education to export of professional services? (Example: NASSCOM's initiative of the National Skills Registry for IT / ITES to improve recruitment practices and build the confidence of global companies in Indian professionals).
9. How much flexibility can be given to foreign education providers in the areas of setting fees, admission, hiring of teachers, course and syllabi?
10. Whether it would be desirable to have an accreditation mechanism to ensure quality?
11. Whether compulsory self-disclosure by private education providers (both Indian and foreign) could be introduced to address the problems of misrepresentation? (For example, in USA, students' 'Right to Know' requirement under the provisions

- of the Higher Education Act of 1965 and Freedom of Information Act requires the disclosure of financial assistance and institutional information to students.)
12. How can the accreditation mechanism be strengthened? Is there a role for private accreditation agencies?
 13. Is there a market for Indian education services abroad?
 14. If yes, what is the potential for expansion to get market access in other countries?
 15. In future, which countries will be important export destinations for education services? What type of education services can be anticipated for exporting in the future?
 16. What are the barriers being faced by the Indian educational institutions, in opening campuses abroad?

1.8. Objectives of the study

In the light of the several inconsistencies and concerns raised in the foregoing discussions the present study was taken with the following objectives:

1. To analyze GATS obligation and mechanisms with respect to higher agricultural education system, and develop recommendation domain.
2. To find out potential risks and opportunities in trade in educational services with respect to- preparedness, commitments in service delivery and receiving service (*modus operandi* and country of interest) and capacity building in agricultural education system.
3. To identify the competitive advantages of Indian higher agricultural education system to take maximum advantage.

Chapter

2



**GATS:
Issues of trade
In educational
services**

Chapter 2

GATS approaches and issues of trade in educational services

2.1. Approaches of different countries

For protecting the trade interests, and enhancing the export of educational services, various countries have adopted different kinds of approaches. GATS provisions have been used in different ways by different countries. An account of these approaches is explained in the following paragraphs

2.1.1. *Developed nations*

In 1994, USA made commitments for other education and adult education. At the time of submission of initial offer, USA included higher education (including training services and educational testing services) but commitments were made for private education service. Limitations listed against national treatment and market access with regard to provisions of scholarships and grants to US citizens, variation of tuition fee for in state and out of state residents, and foreign owned entities ineligible for federal or state funding for subsidies. European Economic Community has submitted only one schedule for 15 member states for commitments and for offer, but offer is conditional on other WTO members making substantive offers in sectors where the EU has made requests. The commitments in higher education are for private services. Limitations have been placed in all modes except Mode 2; horizontal limitations have been listed on constitution of Board of Directors of a company and purchase of agricultural estate by foreign legal entity. Horizontal limitations on national treatment include some critically important issues such as treatment "less favourable" may be accorded to subsidiaries (of third countries companies) formed even in accordance with law of a member state. Canada is the important exporter of the educational services under Mode-2 provisions. Education was not listed in schedule of commitment in 1994; Canada placed no initial request for market access and also did not make any initial offer. Australia has made commitments for private tertiary education. The commitments are for market access but not national treatment under Mode-3. Hence no commitments for public universities, and may discriminate between foreign private and domestic private universities.

2.1.2. Developing Nations

The strategy of Southeast Asian countries i.e. Singapore, Malaysia and Thailand is worth mentioning. During late 1980s Singapore and Malaysia initiated external programs with foreign degree awarding universities, and also initiated process of establishment of foreign universities branches. As a result, dramatic growth of branch campuses of British, Australian and US universities took place, and now these countries are the major part of hub of transnational education in South East Asia. As a result, the enrolments in foreign universities in Singapore exceeded the enrolments in local universities (Christopher, 2003). In Malaysia twinning arrangements reduced the cost of courses because of low living expenses during stay in Malaysia; Private Higher Education Act 1996 provided formal arrangement to private sector, as a result, the enrolments in private universities are far more than the public universities (Johari, 2000). Since 1998, it is allowed for foreign universities to take up whole three years in Malaysia, but entry of foreign universities is through invitation and on terms and conditions (curriculum, Islamic studies, ownership, accreditation in home country etc.) by the Ministry of Education. Similarly, Thailand, where education is considered a key service for export, has placed great efforts in advertising its universities internationally as providing quality programs in many specialized fields including agriculture and forestry. The education strategy helped Singapore and Malaysia in many ways such as reduction of currency outflow, transformation into net exporter of tertiary education, and significant growth of enrolments of local young people in tertiary education; it also contributed to the growth of tourism. In agreement with the strategic policy of education supply, these countries did not make any commitments in GATS towards educational services so that the option of entry of selected foreign universities will remain in force without any obligations towards market access and national treatment.

2.1.3. India

With respect to seeking commitments from other countries, the higher education is partially bound and other types of education are unbound. Agricultural and rural development education is one of the areas where India has sought commitments from other countries. No commitments are sought in mode-1 (cross border supply), full commitments are sought in mode-2 and mode-4 and partial commitments are sought for mode-3 (commercial presence) with the provisions for public sector institutions (NIEPA-2002).

India, in its specific schedule of commitments for market access, has not listed any limitation under mode-1 except that the service providers would be subject to regulations, as applicable to domestic providers in the country of origin. Also there are no limitations under mode-2. Under mode-3, the following two limitations have been listed:

1. Fees to be charged can be fixed by an appropriate authority and that such fees do not lead to charging capitation fees or to profiteering. Subject further to such regulations, already in place or to be prescribed by the appropriate regulatory authority.
2. In the case of foreign investors having prior collaboration in that specific service sector in India, Foreign Investment and Promotion Board (FIPB) approval would be required

For national treatment, India in its offer has not listed any limitation under mode-1 and 2 in the sector of educational services. But for mode-3 horizontal limitations have been listed, that apply across all the service sectors, the following two are most relevant:

1. In case of collaboration with public sector enterprises or government undertakings as joint venture partners, preference in access will be given to foreign service suppliers and entities, which offer the best terms for transfer of technology.
2. Subsidies, where granted, shall be available only to domestic service suppliers. This limitation has been included through the revised offer from India submitted on 24 August 2005 (TN/S/O/IND/Rev.1).

2.1.4. Least Developed Nations

The Least Developed Countries (LDCs) such as Congo and Jamaica have their own problems like low literacy and low infrastructure. Their major aim is to improve the knowledge base without incurring expenditure on development of infrastructure. Therefore these countries have made full unconditional commitments under GATS for the higher education.

2.2. Trade in educational services

2.2.1. Global Scenario of Trade in Educational Services

Trade in Educational Services (ES) has received growing attention, receipts of a country on account of tuition fee and living expenses is export of ES. In 1995 there was

global demand for higher education by 82 million students, in 2025 it would be 159 million students; by this period 87 million students between 18-23 years of age would be in Asia (Frans, 2001). In an estimate the number of students seeking education in a foreign university will reach 1.4 million by 2010 and 3.1 million by 2025 (Grant and Ziguras, 2001). For transnational education (students of country A study in country B but in university of country A or country C) the demand by 2020 in Asia would be 4,80,000 (Blight and West, 1999). Organization for Economic Cooperation and Development (OECD) countries are the largest exporter of ES having 1.6 million international students during 2001 comprising 61,179 students from India, out of total 62,018 Indian students abroad; (Anant, 2004) with Europe being the largest recipient and Asia being the largest emitting region (Czinkota, 2005). USA, Australia and UK are the major exporters of ES, where the ratio of foreign students per domestic students abroad is 14.9, 19.1 and 10.4 respectively; Asia (supply 57 % of international students in US) and particularly China and India are major student suppliers to these countries. These countries combined earn 27b\$ via education export to Asia pacific countries, the future business is to the tune of 37b\$. In US where education is 5th largest sector of export (foreign students during 2003 contributed \$12 -\$18 billion), India contributing 13.9% students is the top student sending country followed by china; William Thorn (2005) reports that during 2003, overseas students in Australia contributed to educational export worth AUS\$7.5 billion representing this sector as Australia's third largest service export; and India is the second largest sending country after China (Table 2.1).

Table 2.1: International students enrolled in various countries during 2003-05

Country	Year	International students	Students from India
Australia	2004	3,22,776	21,000
	2005	2,44,504	19,106*
Germany	2004	-	4,200
New Zealand	2003	-	4,000
United Kingdom	2003	-	10,000
	2004	2,25,722	15,000
United States	2003	5,86,323	74,603
	2004	5,72,509	79,736

Source: Compiled by authors; * up to March 2005 constituting 7.8% of international students

Majority of students from India have the option of choosing between US and Australia because these countries are the major destinations for Indian students¹. Students' choose either of these countries on the basis of selected criteria; for the purpose of probing into these criteria an Internet survey was conducted during August 2005. Analysis of responses received to the questionnaire sent through email to the selected students of Indian origin studying in Australian and US universities reveals various positive and negative parameters (Table 2.2).

Table 2.2: Comparative analysis of Common decision elements

Decision Element	USA	Australia
Visa policy	- (Reversal of H1B visa)	+ (Clear student visa policy)
Personal resident status	- (No priority if enrolled as a US university student)	+ (Priority is given if registered in Australian university)
Chances to immigrate	+	++
Marketing efforts in India	+	++
Number of seats	- (Paucity of seats)	+ (Ample no. of seats)
Student fees	- (High fees)	+ (Low fees)
Online support to prospective students	+	++
Physical support to enrolled students	+	++
Recognition of degree for higher studies in developed nations	+	+
Job prospects in other countries after studies in these countries	++	+
Quality of education in reputed universities	++	+
Special decision elements	Universities of high repute in USA are preferred; if student has an opportunity to get scholarship in a university in Australia and USA, they prefer USA	

Source: Authors' self

In Canada foreign student contribute \$3.5 billion to the economy annually. With respect to field of studies, in these countries mostly students go for studies in business management, engineering and computer science & math; e.g. in US during 2003-04 among the international students, the proportion of students of these subjects was 19.1, 16.6 and 11.8 percent respectively. Agriculture as a field of study is not the major option

¹ Lord Neil Kinnock, Chairperson of the British Council in an interview with 'The Hindu' newspaper appeared on 18th December 2006 in Hyderabad edition admits that one of the reason of 12% decline of overseas enrolments in British universities is the competition from Australia, who spend 43 million Pounds on promotional activities for a period of three years. Another reason is offer of degrees in English medium by countries like France and Germany.

e.g.1.3% of international students in USA during 2003-04 study this subject; but growth in the change in agriculture was +7.6% during 2002-03 to 2003-04, which is less than the growth in social sciences only (Open Door, 2004).

Ratio of foreign students per domestic students abroad in tertiary education is very high in major education service exporting countries (Table 2.3). Non-monitory trade issues include positive influence on labor factor conditions; availability of a highly skilled labor force is a factor contributing substantially to national economic development. Most countries consider investment in education as being of strategic importance to enhance national competitiveness and to increase opportunities to attract foreign direct investment.

Table 2.3: Ratio of foreign students per domestic students

Country	1995	1999
Australia	18.36	19.15
United States	19.37	14.98
United Kingdom	6.58	10.49
New Zealand	4.42	4.18
Germany	3.79	3.45
Switzerland	2.39	2.99
France	4.75	2.71

Source: OECD²

2.2.2. India and Trade in Education

During 2004, India was the world's 16th largest exporter of services, with total services exports at \$39.6 billion (Abhijit Roy, 2006). But in educational services, India has been established as a major importer, therefore foreign governments and universities has adopted several strategies to attract Indian students under Mode 2, the foreign institutions also register their commercial presence through various means such as official representatives to recruit Indian students, visit of delegates, franchisee, joint degree programme and twinning programme etc. (part of study in India and part abroad), Mode 1 presence is felt through distance education and degrees through electronic media. The major strategy, the developed nations has adopted is the institutional arrangement at government level, which not only attract Indian students but also support them in several ways, few examples can be cited. Australian Education International (AEI) is the part of the Australian Department of Education, Science and Training (DEST). AEI uniquely integrates the development of international government relations with support for the commercial activities of Australia's education

² OECD (2002a) Figure 4.3, p.115

community. In Germany, Deutscher Akademischer Austausch Dienst (DAAD), the German Academic Exchange Service is one of the world's largest and most respected intermediary organizations in its field provide support to prospective students. United States Educational Foundation in India (USEFI) promotes mutual understanding between the citizens of India and the citizens of the USA through educational exchange of outstanding scholars, professionals and students. British Council in India had produced an Education UK India website to help Indian students interested in studying in UK. It provides information on type of courses offered by different universities in UK, advice to Indian students and scholarships information. The Department for Education and Skills was established with the purpose of creating opportunity, releasing potential and achieving excellence for all. This site provides information on Higher Education which is useful for the professionals interested in the Government's higher education. Agence Edu France, a French government agency, has set up its desk in New Delhi and nine other centers in India in order to provide comprehensive information related to French education system and offers personalized assistance to those who are keen to seek admission into French schools and Universities. French Information Resource Center also helps the prospective Indian students.

As an exporter of education, India has the poor record, between 1995 and 1999, a period in which there was a substantial increase in the number of international students in the developed countries, the number of international students coming to India declined substantially. There were 11,888 international students in India during 1995, which declined to 6,988 during 2000 with the least number i.e. 5323 in 1999 (Anant, 2004). It is estimated that during 2001, there were 7,791 international out of this 5,800 were in non agricultural state or central universities (Harish Choudhry, 2004), presently estimated number is around 10,000. India is a major importer of education (NIEPA, 2001). In a survey during 2001 the number of foreign students per university in India were 23 in general universities, 26 in other institutions, 51 in IITs and 14 in agricultural universities; only 6 agricultural universities participated³ in this survey (NIEPA, 2001). The experts of Higher education concerned deeply with the fact that India has not been an effective player in attracting International students in the past, and also among the international student community, large number come from developing world of Asia and Africa.

³ During 2004 there were only 122 students in agricultural universities

2.2.3. India's trade concerns in various modes

Under Mode-1, distance education in India is in its infancy and degrees obtained through distance education are not treated as equal to the degrees obtained as regular students. Thorn (2005) reports the same for Australia. In view of expected high growth in Korea and China, India must develop competitive strategies to increase accessibility to Internet, which is presently available to only 0.1% of the population. Some private institutions from India are doing wonderfully for example National Institute of Information Technology (NIIT) has its center and franchises in 44 countries, similarly Tata Consultancy Services (TCS) has taken up initiatives in the form of franchise in China. But this mode is sensitive area on many fronts. For example, Powar (2005)⁴ in his country paper writes;

“There are conflicting views as to whether uncontrolled use of the Internet for higher education should be allowed. There is a danger that the indigenous higher education systems may be inundated by the flow of information from the developed countries. Hence, India and other Asian countries may find the need to regulate cross-border supply of education, using electronic transmission, by framing appropriate legislation or through other measures, including the non-recognition of degrees awarded through the e-mode, and discouraging joint ventures in this area”

Under Mode-2, Asia contributes 57% and 80%, while India contributes 13.9% and 11% of international students in USA and Australia respectively. In 2004, India was the top country in sending students to the USA and second largest after China (Open Door report, 2004). It is also the largest in sending students to Australia. Statistics for the first quarter of the year 2005 released by AEI indicate that 244,506 international students have enrolled in all sectors of education. Of these 19,995 are Indians, including 25.8% commencing enrolments; 90.5% of Indians are in higher education. The major challenge under this mode is not only attracting foreign students but also retaining our own students, and also check brain drain. Chandrasekhar (2006) reports that during 2003, 90% of doctoral students in USA planned to stay there only, and that India's priority

⁴ K.B. Powar (2005). Country Paper on India: Implications of WTO/GATS on higher education in India. Papers presented at the Regional Seminar for Asia Pacific 27-29 April 2005, Seoul, The Republic of Korea. UNESCO Forum Occasional Paper Series Paper no. 9 (ED-2006/WS/48), page 130-150.

today should not be that of becoming exporter of educational services, but of ensuring good quality higher education to its young citizens.

Under Mode-3, the prime objective is to face the challenge of the existing commercial presence of foreign institutions happening through advertisements and various other means. This mode of supply is of particular interest to developed countries, but for India, here is an issue of attracting foreign investment, which should result in achieving development goals (Abhijit Roy, 2006). For India, countermeasures in education are to establish the commercial presence in other countries through joint degree programs, twinning programs, establishment of branch campuses and recruitment offices, and appointing official representatives etc. the agricultural universities must be the part of Promotion of Indian Higher Education Abroad (PIHED) project of University Grants Commission (UGC), otherwise Indian Council of Agricultural Research (ICAR) must launch a similar kind of project to enhance the commercial presence abroad and also to strength of foreign students in the agricultural and veterinary universities. BITS, Pilani; IIM Bangalore are some public institutions which have opened the branch campus in Dubai and Singapore respectively. The further challenge is that Indian students may enhance transnational education through taking admissions in Australian, US, British or even Indian universities established in Southeast Asian countries. For Mode 2 and 3, like Malaysia the greatest strength with Indian universities is the cost competitiveness.

2.2.4. Remittance from India for consumption abroad

India being the major importer of education, the major challenge is to reduce the remittance on account of fees and living expenditure by students, during 2000 the estimated remittance towards fee alone was Rs 400 crore (NIEPA, 2001). On the basis of annual tuition fee and living expenses in various countries (Table 2.4), Soam and Kalpana Sastry (2005) have estimated the fee remittance from India to developed nations. If it is assumed that 50% of Indian students abroad get scholarship which meet out complete expenditure of fee and living, and rest of the students meet out their 50% of total expenditure, then also total remittance to USA, Australia, UK⁵ and New Zealand

⁵ Lord Neil Kinnock, Chairperson of the British Council in an interview with 'The Hindu' newspaper appeared on 18th December 2006 in Hyderabad edition respond to a question that difference between home fees and overseas fees in Britain is sometimes as high as £12000 yearly.

was Rs 2083 crore during 2004 (Rs 1226 crore towards fee & Rs 857 crore towards living expenses).

The strategic policy of India to reduce the fee remittance to other countries, and increase the education export to be addressed in the light of following facts:

1. Growth rate of Indian students' mobility to developed nations is significantly higher than any other Asian country.
2. China and South East Asian countries are main competitors. Among top 200 universities included three in China, Hong Kong and South Korea each, and one in India and Taiwan each; China is heavily investing in improving its best universities with the aim of making them world class (Altbach, 2005). For trans national education in these countries the proportion of Indian students is likely to increase in the coming years.
3. India's best universities require sustained state support to develop excellence.

India has the potential of export to various developing nations and least developed nations in Africa, Latin America, West Asia, Middle East and South Asia. But in these regions, Australia has already initiated lot of promotional efforts and established branch campuses of its universities making it as a major competitor. Attracting foreign students to state and central agricultural universities, and also retaining the students in AUs would be a big challenge⁶. For this institutional arrangement through embassies, identification of niche areas, niche subject, niche countries and core institutions in national agricultural research and education system

Table 2.4: Expenses for science courses in developed nations during 2003-04

Countries	Annual tuition fee for UG and PG courses (US\$)	Annual living expenses (US\$)
United Kingdom	12272-18310	11400
Australia	8200-13000	10525
New Zealand	9994-11369	4981
Canada	3127-14029	3000-7500
United States	3500-15000	4700-8000

⁶ Promotional efforts of some countries are very lucrative. For example, Scotland offers scholarships and loans, flexible policies for work permits, and greater avenues to stay back in Scotland (Education plus, The Hindu, Hyderabad edition 4th December 2006). France offer six month stay to find a job after the completion of course (Education plus, The Hindu, Hyderabad edition 19th December 2006).

are critical issues to be looked into. A careful planning and implementation is a must to reduce the remittances and enhance the foreign exchange reserves through educational services under various modes, carelessness may result in disaster (Box 2.1).

Box 2.1: Possible repercussions of less seriousness towards GATS

The quality of education provided by Indian higher education institutions is variable and only a small percentage of students receive quality education of international standards. The demand for quality education is high, and with a burgeoning upper- and upper-middle class population the universities of the developed world may find a good market for their degree programmes provided they reduce tuition fees. Indeed, fear is being expressed that the Indian higher education scene will, in the not too distant future, have an important western component. If an 'academic invasion' does materialize then Indian policy-makers, administrators and educators will have to accept a share of the blame for they have not paid adequate attention to the crucial aspects of financing of higher education and the maintenance of its quality.

Powar (2005)

Chapter

3



**Methodologies of
data collection**

Chapter 3

Methodologies of data collection

3.1. Instruments of data collection

On the basis of the objectives and activities defined under the project, and also the various modes of service supplies under GATS, the instruments of data collection were finalized, which are described as given below:

- a. Understanding GATS through document survey, analysis of secondary data and interview schedules
- b. Empirical studies through concept mapping
- c. Collection of basic data through nodal officers
 - i. Development of working paper on GATS
 - ii. Development of questionnaires
 - iii. Conduction of brainstorming workshops
- d. Empirical studies under Mode-1, 2 and 3

3.2. Understanding GATS through document survey, analysis of secondary data and interview schedules

As a foremost activity the document survey through Internet and published articles were used as instrument of understanding GATS, its provisions, international and national developments and also implications which are likely to occur with respect to higher education in the country. The documents of WTO and request and offer proposals of various countries were studied to clarify the stand of various nations. The interviews of senior functionaries in ICAR and other organizations helped in identification of implications of GATS related to policy of government and other key stakeholders such as ICAR and AUs. Following are the important persons interviewed for the purpose:

- Dr J. C. Katyal, DDG (Edn) ICAR, New Delhi
- Dr H.S. Nainawate, ADG (Edn Div), ICAR, New Delhi
- Dr Sudhanshu Bhushan, Head, WTO cell, National Institute of Education Planning and Administration (NIEPA), New Delhi
- Dr Nilay Ranjan, WTO cell, NIEPA, New Delhi
- Mr. Madukar Sinha, Registrar Copyrights and I/c GATS matters, Govt of India, New Delhi

- Mr. Dinesh Kumar Paliwal, Director, Ministry of Human Resource and Development, New Delhi
- Dr S.K. Garg, Vice Chancellor, Veterinary University, Mathura

3.3. Empirical studies through Concept mapping

One of the most important activities of the project was to understand that ‘what is the level of understanding of faculty members of AUs in GATS and matters related thereof?’ The faculty members of AUs attending training programs at NAARM were first exposed to a classroom lectures on ‘GATS and its provisions’. Following it, the participants were divided into six groups. Two groups each were given the following identified areas of discussion:

1. Perception of teachers on general understanding of miscellaneous issues for making agricultural education system globally competitive.
2. Perception of teachers in SAUs on ‘what Indian agricultural universities can offer and to whom?’
3. Perception of teachers in SAUs on ‘extension of services of Indian agricultural education abroad’.

The understanding of GATS and possible implications were recorded in the form of concept maps, and SWOT analysis was done using these concept maps and conducting separate session for SWOT.

3.4. Collection of basic data through nodal officers

Often it has been observed that through postal mails, the response of the filled-in questionnaires is very low; in absence of the good response the quality of data may not be up to the mark. Therefore in this project a unique approach has been adopted by officially identifying the nodal officer in each AU for facilitation of data collection, the major objective of involvement of these nodal officers was:

1. To ensure the high response in data collection through questionnaire
2. To create awareness among the AU about GATS through brainstorming workshops
3. To involve AUs in strategy making through feedback and recommendations provided during the brainstorming workshops

4. To provide administrative information about the university through 'schedule of status information'.

The Director, NAARM vide letter no. F.No. GATS/2-1/2005 dated 14th February 2005 requested the Vice Chancellors of the agricultural universities to nominate a nodal officer in their universities. Eventually to facilitate project activities, 35 agricultural universities/ deemed universities responded and nominated 36 Nodal Officers (NDRI, Karnal nominated two nodal officers). Category wise these universities are 28 SAUs, CAU, 2 Central Universities, 3 ICAR Deemed Universities, and one another Deemed university i.e. Gandhigram Rural Institute (for list of N.O. please see Annex 3.1).

3.4.1. Development of working paper on GATS

The issue of GATS quite recent and mostly people including nodal officers are not aware with the critical issues, it is assumed that before data collection, the overall understanding of GATS and implications specific to agricultural education must be clear to all the stakeholders concerning the research project. With this purpose the activity of developing a working paper entitled "GATS: Overview and Issues Pertaining to Agricultural Higher Education in India" was taken up and completed with the intention of more useful data collection through questionnaires and brainstorming workshops to be conducted as part of the project activities. The working paper was sent to each nodal officer, and it has been a useful instrument in clarifying the GATS provisions and implications and also ensuring the good quality of data through questionnaires and brainstorming workshops [Soam and Kalpana Sastry (2005)].

3.5. Development of data collection instruments

The major challenges in data collection for this project were, 1. GATS is a new subject, 2. The provisions are complicated, 3. Understanding level of respondents about WTO and GATS is very low, and, 4. Most of the likely respondents have not heard the GATS and its implications with higher agricultural education. Designing a questionnaire for the respondents, who are not aware of GATS, and extracting information from them to face the challenges of GATS was in itself a big challenge. It was therefore decided to prepare a detailed list of parameters of data to be collected and also means of data collection i.e. process of data collection. The major input for identification of data type nature of data and process of data collection has come from the following sources:

1. Secondary data screened through WTO documents, published papers and other sources
2. Primary data collected through concept mapping and interviews
3. Involvement of senior functionaries of SAUs in identification of major issues (Annex 3.2)

As a result of information available from the above sources around 100 parameters are identified for collection of data (Annex 3.3). The mode of delivery of service as applicable under GATS provisions and as given below made the final basis of collection of data:

1. Cross-Border Supply: The provision of a service where the service crosses the border (does not require the physical movement of the consumer) e.g. distance education, virtual education through Internet etc.
2. Consumption Abroad: Provision of the service involving the movement of the consumer to the country of the supplier e.g. students who go to another country to study.
3. Commercial Presence: The service provider establishes or has presence of commercial facilities in another country in order to render service e.g. local university, satellite campuses, joint program, twining program, official representatives etc.
4. Presence of Natural Persons: Persons traveling to another country on a temporary basis to provide service.

The data collected on the basis of modes of supplies as defined under the GATS provisions is codified into the as given in table-3.1. Other than modes of supplies, the data from various sources to be collected, these data influences higher agricultural education system across the modes of service supply, thus it is classified as given in the table 3.2.

Table 3.1: Data code on the basis of service delivery mechanisms

S.N.	Mode	Service delivery mechanism
1	MODE-1A	India provide education service to other countries
2	MODE-1B	Other countries provide education service to India
3	MODE-2A	Indian students going abroad for education
4	MODE-2B	Foreign students come to India for education
5	MODE-3A	Indian university's commercial presence abroad
6	MODE-3B	Foreign university's commercial presence in India
7	MODE-4A	Indian professors move abroad
8	MODE-4B	

Table 3.2: Data code on the basis of nature of data

S.N.	Nature of data	Code
1.	General Issues	GI
2.	Strategic Policy Issues	SPI
3.	Basic Data-Available Academic Structure	BAS
4.	Basic Data- Expenditure Details	BED

For the collection of data as described in table 3.1 and table 3.2, the type of data is described, the data are grouped and categorized as major categories such as-Primary National Data (PND), National Data- secondary data (ND), International Data (ID), Case Study (CS), National Policy (NP) and Basic Data (BD) etc.

For the convenience of data collation, analysis and reporting point of view the data code is accompanied with the number e.g. M3B56 is “Preparedness and regulatory requirements to face entry of foreign universities” and this belong to MODE-3B, it is ‘Primary National Data (PND)’ which is to be collected through brainstorming workshops.

The methods of data collection are decided on the basis of feedback given by various stakeholders, nature and type of data and available scientific practices for collection of such kind of data. The process followed and practices adopted for each kind of data collection instruments is described in the following paragraphs.

3.6. Development of questionnaires

The questionnaires has been developed by using following procedures

- a. Preparation of the questionnaire by the project team
- b. Discussing the questionnaire in a in-house meeting at NAARM on 23rd March 2005, besides project team, Dr T. Balaguru, HoD (ARSMP), Dr D. Ramarao, HoD (ICM) and Dr Jaganadham Challa, Principal Scientist (Education Technology) participated in the meeting. The parameters were screened and finalized for incorporation in questionnaires. Finally it was decided to have three kinds of questionnaires e.g. one for Head of the college such as Principal, Associate Deans etc, and HoD of ICAR deemed universities, second for HoDs of AUs, third for all cadres of faculty members of AUs. The nodal officer would have a separate kind of data collection instrument known as ‘schedule of status information’.

- c. The third step in questionnaire development was 'pre-testing' them. For this purpose, on 18th April 2005 the questionnaires were sent to 100 respondents at ANGRAU, Hyderabad through nodal officer. The respondents were asked to fill the questionnaires and answer 7 questions about the questionnaire provided in the end. Fifty respondents responded, the analysis of responses reveals that all the respondents felt that the questionnaire is simple and understandable. About subject matter, 10% ranked it as excellent, 30% as very good and 60% as Good. Ninety two percent of the respondents could grasp the questions easily. The average time taken by each respondent for filling up the questionnaire was 16 minutes. The questions asked at pre-testing stage are given in box 3.1, the respondents have also given some suggestions as given in box 3.2, the relevant suggestions were incorporated in the questionnaires.

Box 3.1: The questions asked for pre-testing of the questionnaire

1. Is the questionnaire simple? Yes/ No
2. Are the questions understandable? Yes/ No
3. How is the subject matter? Excellent/V. good / Good/ Average
4. Could you grasp all the questions? Yes/ No
5. How much time you took in filling the questionnaire? ----Minutes
6. With respect to subject content, do you feel that something more can be added, if yes please write here?
7. Do you have any suggestions to improve the questionnaire please give the question no. and also modification required?
8. Any other suggestion:

- d. The fourth and final step in questionnaire development was the '**validation of questionnaires**'. For this purpose a workshop was conducted at the College of Agriculture, ANGRAU, Hyderabad on 23rd May 2005. Dr G Bheemaiah, Associate Dean of College, Dr K. Suhasini, Nodal officer, and 25 faculty teachers of various cadres including HoD's participated. The pre-testing results were discussed, and suggestions were made for further improvement; these were included, and questionnaires were finalized for printing.

Box 3.2: Important suggestions received through pre-testing stage

1. Attitude of Indian students who are abroad for education may be analyzed
2. Course and course curriculum should be given top priority in a twining programme which may be useful to both the host and guest universities
3. MoU between foreign university and ANGRAU with regard to infrastructure fund, building fund, technical transfer of manpower and recognition of degree and PG degrees at abroad must be done
4. Best research facilities and Universities in India must support talented students by fellowships
5. Mode and extent of funding, lack of technical persons

For collection of primary data from various universities following questionnaires have been finalized using above described procedure:

1. One set of questionnaire is developed for collecting data from Heads of the colleges/ Heads of Divisions (HoD) of ICAR Deemed Universities/ Heads of Department (HoD) of AUs & other universities. This questionnaire was printed in blue color; as this questionnaire designed to collect data from two different groups. Therefore it contains few questions, which are designed exclusively for Heads of colleges and other decision makers such as Dean, Director etc. in AUs and HoDs of ICAR deemed universities (Annex 3.4).
2. Second set of the questionnaire was designed to collect data from the faculty teachers of various cadres in AUs/ ICAR deemed universities/ other universities. To differentiate it from other, it was printed in black color (please see Annex 3.5).
3. The last of questionnaire was designed to collect specific information from the nodal officers of the project. In fact these are not questions rather these are various parameters about which the information has to be recorded about participating university. This instrument of data collection has been named as "Schedule of Status Information" which is printed on yellow color paper, and Nodal officers were requested to provide information in this schedule (please see Annex 3.6)

3.6.1. Questionnaires: Data collection process

During July 2005 the questionnaires were sent to all 35 coordinating universities for 103 colleges available at their campuses. For each college/ deemed university, the proportion of questionnaires was 25 for faculty members of various cadres, 10 for HoDs (Head of Dept. in case of SAU, and Head of Division in case of ICAR deemed universities), and one for Head of college i.e. Associate Dean or Principal. The data collection through questionnaires is to be facilitated by the nodal officers, the arrangement is that nodal officer would identify around twenty local 'Contact Resource Persons' out of various colleges at their university campus, nodal officer would conduct a two hour contact session with them to clarify any issue related to GATS. In turn, these 'Contact Resource Persons' would distribute these questionnaires to various respondents (faculty members/ HoDs) and return filled-in questionnaires to the nodal officer. Finally nodal officer would send the filled-in

questionnaires to the project PI along-with filled in 'Schedule of Status Information' and 'Certificate of the Nodal Officer'.

3.6.2. Analysis of questionnaires sent and received

Because of the unique method of data collection, the final recovery of the filled-in questionnaire was very appreciating, approximately 44 percent questionnaires filled and sent back to project unit for the analysis (Table 3.3).

Table 3.3: Analysis of questionnaires sent and filled-in received

Category	Questionnaires sent	Filled-in received	% Recovery
Faculty	2691	1266	47.03
HoDs	1030	359	34.85
Head of colleges	102	47	46.08
Total	3823	1672	43.72

In case of nodal officers, out of thirty-five only twenty-two responded. The list of AUs, which sent the filled-in schedule of information about the AU concerned, is available in table 3.5. Among all the 35 universities, the response was highest from the CCS-HAU, Haryana, which sent back 90.7% of filled-in questionnaires; GAU (J), Junagarh was almost close to it with 90.3% feed back (Table 3.4). Out of 35 universities approached nearly half i.e, 16 universities responded well by sending back more than 50% filled-in questionnaires. The details of the questionnaires from the individual universities is available in table A.3.1. The fair amount of the feedback received from various AUs provided the concrete basis for finding the effective strategies in this project. The response of the faculty, HoDs, Heads of the colleges is given in the top ten analysis (Table- 3.6. 3.7. 3.8).

Table 3.4: Top ten AUs: Overall response to questionnaires

Ranking	University	Place	% Questionnaires received
1.	CCS-HAU	Hisar	90.74
2.	GAU (J)	Junagarh	90.28
3.	GAU (A)	Anand	84.26
4.	KVAFSU	Bidar	83.33
5.	MPKV	Pune	80.56
6.	CIFE	Mumbai	80.56
7.	MPUAT	Udaipur	79.86
8.	OUA&T	Bhubaneswar	79.44
9.	Dr.BSKKV	Dapoli	68.06
10.	CSK-HPKV	Palampur	65.97

Table 3.5: Schedule of information received from various AUs

S.N.	Name of AU	Place	Nodal officer
1.	AMU	Aligarh	Prof. Javed Musarrat
2.	ANGRAU	Hyderabad	Dr. K. Suhasini
3.	BCKV	Mohanpur	Prof. PK Chakraborty
4.	CAU	Imphal	Dr. N. Ram Singh
5.	CIFE .	Mumbai	Dr. G. Venkateshwarlu
6.	CSAUAT	Kanpur	Dr. Udit Narain
7.	CSK-HPAU	Palampur	Dr. GL Bansal
8.	Dr.BSKKV	Dapoli	Dr. JM Talathi
9.	Dr.PDKV	Akola	Dr. ER Patil
10.	GBPUAT	Pantnagar	Dr. HS Chawla
11.	CCS-HAU	Hisar	Dr. RK Grover
12.	IVRI	Izatnagar	Dr. Rishendra Verma
13.	GAU (A)	Anand	Dr. GN Patel
14.	GAU (J)	Junagadh	Dr. KA Khunt
15.	KAU	Thirussur	Dr M. Achuthan Nair
16.	MAU	Parbhani	Dr. SP Kalyankar
17.	MPKV	Rahuri/Pune	Dr. Ramanath K Rahane
18.	MPUAT	Udaipur	Dr. KA Varghese
19.	NDUAT	Faizabad	Dr. JL Dwivedi
20.	OUAT	Bhubaneswar	Dr. Hrudananda Atibudhi
21.	PAU	Ludhiana	Dr. Sukhpal Singh
22.	RAU	Pusa	Dr.DK Sinha

Table 3.6: Top ten AUs: feed back from faculty members

Ranking	University	Place	% Questionnaires received
1.	CCS-HAU	Hisar	94.00
2.	OUA&T	Bhubaneswar	93.60
3.	ANGRAU	Hyderabad	92.00
4.	GAU (J)	Junagarh	92.00
5.	MPUAT	Udaipur	87.00
6.	MPKV	Pune	86.00
7.	CIFE	Mumbai	84.00
8.	GAU (A)	Anand	82.67
9.	CSK-HPKV	Palampur	77.00
10.	KVAFSU	Bidar	76.00

Table 3.7: Top ten AUs: feed back from HoDs

Ranking	University	Place	% Questionnaires received
1.	KVAFSU	Bidar	100
2.	IVRI	Izatnagar	90
3.	GAU (A)	Anand	87
4.	GAU (J)	Junagarh	85
5.	CCS-HAU	Hisar	82
6.	CIFE	Mumbai	80
7.	NDRI	Karnal	70
8.	MPKV	Pune	65
9.	MPUAT	Udaipur	65
10.	RAU (P)	Samastipur	65

Table 3.8: Top ten AUs: feed back from Heads of colleges

Ranking	University	Place	% Questionnaires received
1.	ANGRAU	Hyderabad	100
2.	CCS-HAU	Hisar	100
3.	CSK-HPKV	Palampur	100
4.	GAU (A)	Anand	100
5.	GAU (J)	Junagarh	100
6.	Dr.BSKKV	Dapoli	100
7.	KVAFSU	Bidar	100
8.	MPKV	Pune	100
9.	AMU	Aligarh	100
10.	OUA&T	Bhubaneswar	80

3.7. Conduction of brainstorming workshop

The data and information, which requires face-to-face interaction and group discussions, is to be collected through conduction of brainstorming workshops at various universities. Ten strategic issues related to GATS and implications were identified and data on these issues was collected through brainstorming workshops (please see Box 3.3). The subject of GATS and the methodology adopted for the data collection i.e. brainstorming was new to most of the participants therefore it was therefore decided to conduct the workshop in such a fashion so that participants have the first hand information about the GATS, its major implications, and also the methodology adopted for the session. Keeping in view the defined objectives, the itinerary of the workshop as given below was followed:

1. First of all the project investigators would explain about the GATS and its provisions in such a way that output of the workshop is not affected,

2. The participants would then be apprised about the method of the workshop, and procedure of idea generation and idea documentation on the cards,
3. The participants would now be asked to generate ideas about the issue in question. And the participants work in groups consist of five to six persons in each group, they group the related ideas into relevant clusters identifying the themes (driving forces) and sub themes (driving elements). Finally, the participants' groups prepare a group report,
4. In the last and final activity, the participant groups would present the group report to the audience, the output from each group would be discussed critically and feedback so obtained would be incorporated in the group report.

Under the project, eight brainstorming workshops were conducted in the chronology as given in the table 3.9. In total 290 faculty members consisting of Deans, HODs, Professors, Associate Professors and Assistant Professor from selected AUs participated in these brainstorming workshops. Highest participation was at KVAFSU, followed by CSK-HPKV, Palampur and KAU, Thrissur.

Table 3.9: Chronology of brainstorming workshops at AUs

S. N.	University	Date	No. of participants
1	ANGRAU, Hyderabad	15/06/05	23*
2	UPPDVU, Mathura	15/07/05	30
3	CSK-HPKV, Palampur	18/07/05	46
4	NDRI, Karnal	12/08/05	33
5	CIFE, Mumbai	26/08/05	33
6	KVAFSU, Bidar	01/12/05	54
7	OUAT, Bhubaneswar	15/12/05	35
8	KAU, Thrissur	25/01/06	36
Total			290

* Include three professors from Osmania University, Hyderabad

Box 3.3: Ten strategic issues discussed during brainstorming workshops

A. Priority setting:

1. Prioritized options of modes of service delivery in favor of Indian higher agricultural education (Mode-1: Cross border supply, Mode-2: Consumption abroad, Mode-3: Commercial presence)
2. Prioritized list of five top agricultural subjects where arrival of foreign students is most expected.
3. Prioritized list of country wise expected arrival of foreign students (developed nations, developing nations of Asia, developing nations of Africa, developing nations of Latin America)

B. Strategic Analysis:

4. Effective strategies for attracting foreign students in agricultural universities in India
5. Effective strategies for establishment of commercial presence of Indian agricultural universities abroad
6. Preparedness and regulatory requirements to face entry of foreign universities

C. SWOT analysis for establishing India as an exporter of agricultural education service:

Foreign students come to India; Indian universities set up branch campus abroad; Indian professors move abroad for service delivery.

7. Strengths
8. Weaknesses
9. Opportunities
10. Threats

3.8. Empirical studies under Mode-1, 2 and 3

Three empirical studies have been designed, one relate to analysis of advertisement put by foreign education providers in Indian newspapers. This study is related to Mode-2 &3 of GATS provisions; for format of the data collection sheet (please see Annex 3.7). Second study relates to Mode-1, where project team conducted the analysis of websites of the SAUs and other universities; for format of the data collection sheet (please see Annex 3.8). The third study pertaining mostly to Mode-2, relate with the foreign students studying in AUs and other universities India; for format of the data collection sheet (please see Annex 3.9).

The advertisements by foreign universities in 'The Hindu' newspaper, to attract Indian students to study abroad in their universities was analyzed for a period of one hundred and fifty days form January to May 2005. The data was collected on the following four aspects:

1. Advertisements by foreign universities through various agencies
2. Purpose of advertisements
3. Subject-wise advertisements by foreign universities
4. Number of advertisements by foreign universities in various countries

For study of the strength of the information technology tool of the universities; the web sites of 38 State Agricultural Universities, 5 Deemed Universities, 3 Central Universities, 3 Private Universities and top five universities attracting foreign students in India were analyzed during May-June 2005.

Chapter

4



**Survey results:
profile of
respondents**

Chapter 4

Survey results: profile of respondents

As mentioned in the chapter 3 of methodology, the respondents for the questionnaire survey were of basically three kinds 1. Faculty member of any rank, 2. Head of Department (HoDs) of AU, and 3. Head of the college of AU and Head of Division (HoDs) in ICAR Deemed Universities. Complete information about questionnaires sent and received in these individual kind of professionals with respect to their university can be referred in Table A. 4.1. The detailed analysis is given in the following paragraphs.

4.1. Profile of HoDs and Head of colleges

In total there were 406 respondents, among this 47 are included in the category of Head of colleges, these may be Principals, Associate Deans, Deans, Chairman of Faculty, Directors of AUs or HoDs of ICAR deemed universities. The distribution of respondents based on gender was highly skewed in favor of the male, the female respondents among the category of HoDs from AUs constitute less than 10 percent only. For the Heads of colleges this is even more skewed in favor of males, which constitute more than 95 percent of total respondents in this category (Table 4.1).

Table 4.1: Gender analysis in total sample of HODs

Gender	Total HoDs		Head of Colleges	
	N	%	N	%
Female	39	9.61	2	4.26
Male	367	90.39	45	95.74
Total	406	100	47	100

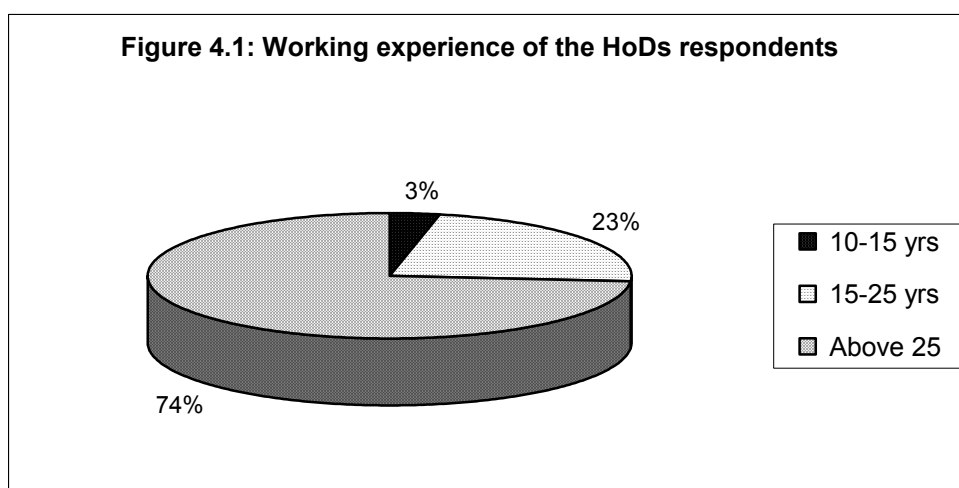
Table 4.2: Designation wise distribution of respondents

S. N.	Designation	N	%
1	HoDs/ Chairman of AUs	263	64.78
2	HoDs of ICAR deemed universities	17	4.19
3	Principal/ Dean/ Director	38	9.36
4	Associate Dean	13	3.20
5	Principal Scientist/Professor	47	11.58
6	Senior Scientist/ Associate Professor	24	5.91
7	Assistant Professor/Scientist	4	0.99
	Total	406	100

The designation wise spectrum of the respondents is given in table 4.2, from total HoDs, 65 percent are HoDs of various departments in AUs in AMU Head of faculty in

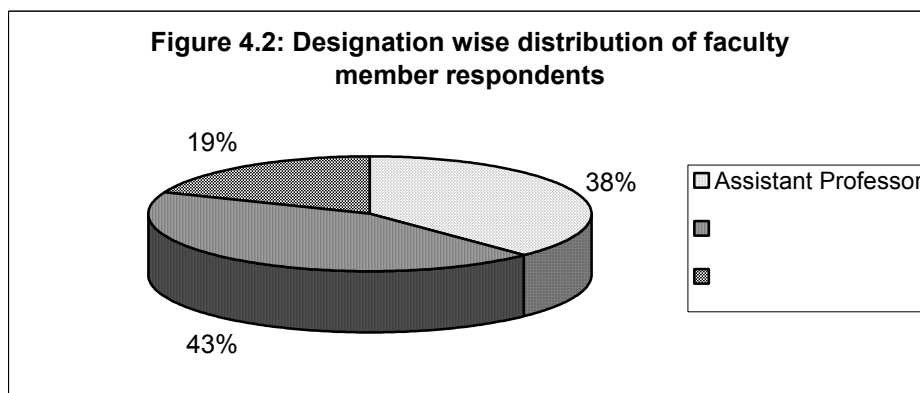
agriculture is known as Chairman, the rest are either Head of colleges or HoDs from ICAR deemed universities; some of the HoDs are not regular HoDs, these are persons of various ranks in in-charge position.

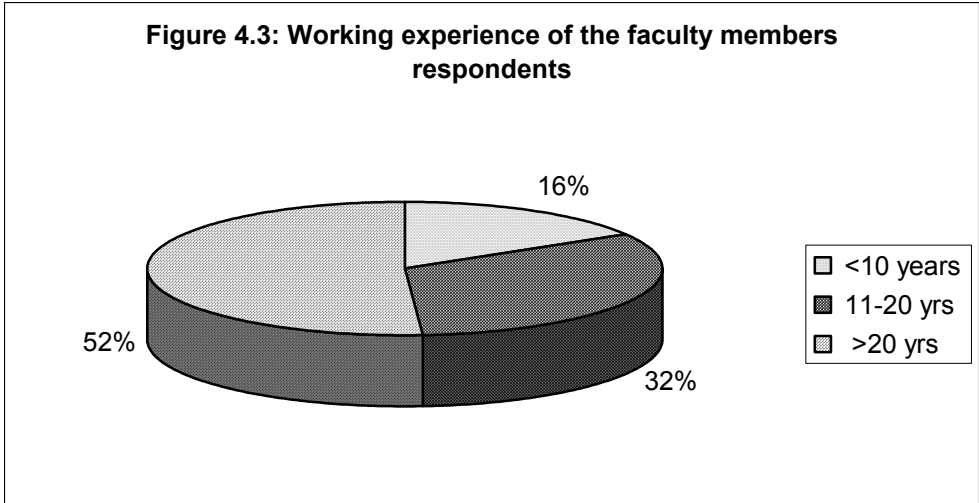
Out of 406 respondents, 397 responded to the question about age. Most of the respondents were from the age group of above 50 years (72.3%) followed by between 35 to 50 years (26.7%) and only 1percent of them were less than of 35 years. As reflected by the age of the respondents, as revealed by 399 respondents, most of them (>73%) had the experience of more than 25 years of service (Fig 4.1), this is good sign for the quality of data collected from these respondents.



4.2. Profile of faculty members from AUs

In total 1266 faculty members from 36 AUs participated in information sharing activity through questionnaire survey, among this 200 (15.8%) were female faculty members.





Most of the respondents were either Associate Professor or Assistant Professor (Fig 4.2). Out of the 1248 respondents, who responded for the question about age, about 421 (33.7%) are more than 50 years of age, 716 (57.7%) are between 36-50 years of age, and rest about 9 percent are less than 35 years of age. It can be thus said that faculty members of good working experience have contributed data for this project. For the job experience, 1258 faculty members responded, and analysis of data reveals that about 84 percent have experience of more than eleven years (Fig 4.3) it means the information given by them in the questionnaires is based on lot of work experience.

Chapter

5



**Survey results:
Conceptual
understanding**

Chapter 5

Survey results: Conceptual understanding of faculty members of AUs about globalization

5.1. Major issues and processes of conceptual understanding

The faculty members of AUs attending two training programs at NAARM during 2004 were exposed to a classroom lectures on 'GATS and its provisions'. In each training program, for developing concept maps through group activities, the participants were divided into six groups. In both the training programs, two groups each were given the following identified areas of discussion for conceptual understanding:

1. What are major issues for making agricultural education system globally competitive?
2. What Indian agricultural universities can offer and to whom?
3. How to extend educational services of AUs abroad?
4. Perception of teachers on general understanding of miscellaneous issues for making agricultural education system globally competitive.
5. Perception of teachers in SAUs on what Indian agricultural universities can offer and to whom?
6. Perception of teachers in SAUs on extension of services of Indian agricultural education abroad.

For further expansion of conceptual understanding about the present situation of Indian higher agricultural system vis-à-vis establishing India as a supplier of higher agricultural education, a SWOT concept analysis was done with the help of four groups of the participants of the training program on "Summer School on Customizing Multimedia lesson modules for varied learning sequences with special reference to SAU system" conducted at NAARM during June-29-July18, 2005. Before group work, the trainees were exposed to GATS and its various provision in a classroom lecture.

5.2. Perception of teachers on general understanding of miscellaneous issues for making agricultural education system globally competitive

The main emphasis under this issue as shown in the figure was on infrastructure, which included residential environment and learning environment. Institutional policy was

also identified as another important area, which included HRD, collaboration and education quality along with student support in the form of fees, fellowships, financial resources, need based education and industrial links. Delivery mechanism, which included aspects such as education system, admission criteria, course duration, regularity of course was also considered under this issue (Figure 5.1).

5.3. Perception of teachers on content of services available with AUs and market segment

There was a general perception among the groups, that India can offer service consultancy, contract farming, qualified professionals and services like horticulture, processing techniques can be offered on demand to developed nations and to developing nations. SAUs can also offer developmental training like water harvesting, advanced training like research training, biotechnology. Consultancies such as forecast and demand analysis can also be offered to the local stakeholders like government, NGO and private sector (Figure 5.2).

5.4. Perception of teachers on extension of services of AUs abroad

Under this issue it was perceived that agricultural education services can be delivered to developing countries like Nigeria and African countries, need based countries like Nepal, neighboring countries like Bangladesh and also to the developed countries. The agricultural services can be delivered through distance education via electronic, print and internet media, interactive systems like demonstration, short courses, seminars, workshops, farmers interaction and also by means of collaboration like institutional arrangements, consultancy, projects, youth exchange, visiting fellowships. The opportunities under this issue were identified as exploring new ideas, utilization of underemployed agricultural scientists, acquiring expertise, enhancing self-competence and improving trade relations. The main constraints identified by the groups were in the areas of infrastructure, resources, financial resources, policy issues both at national and international level and the time required for global competence (Figure 5.3).

Figure 5.1: Perception of teachers in SAUs on general understanding of miscellaneous issues for making agricultural education system globally competitive

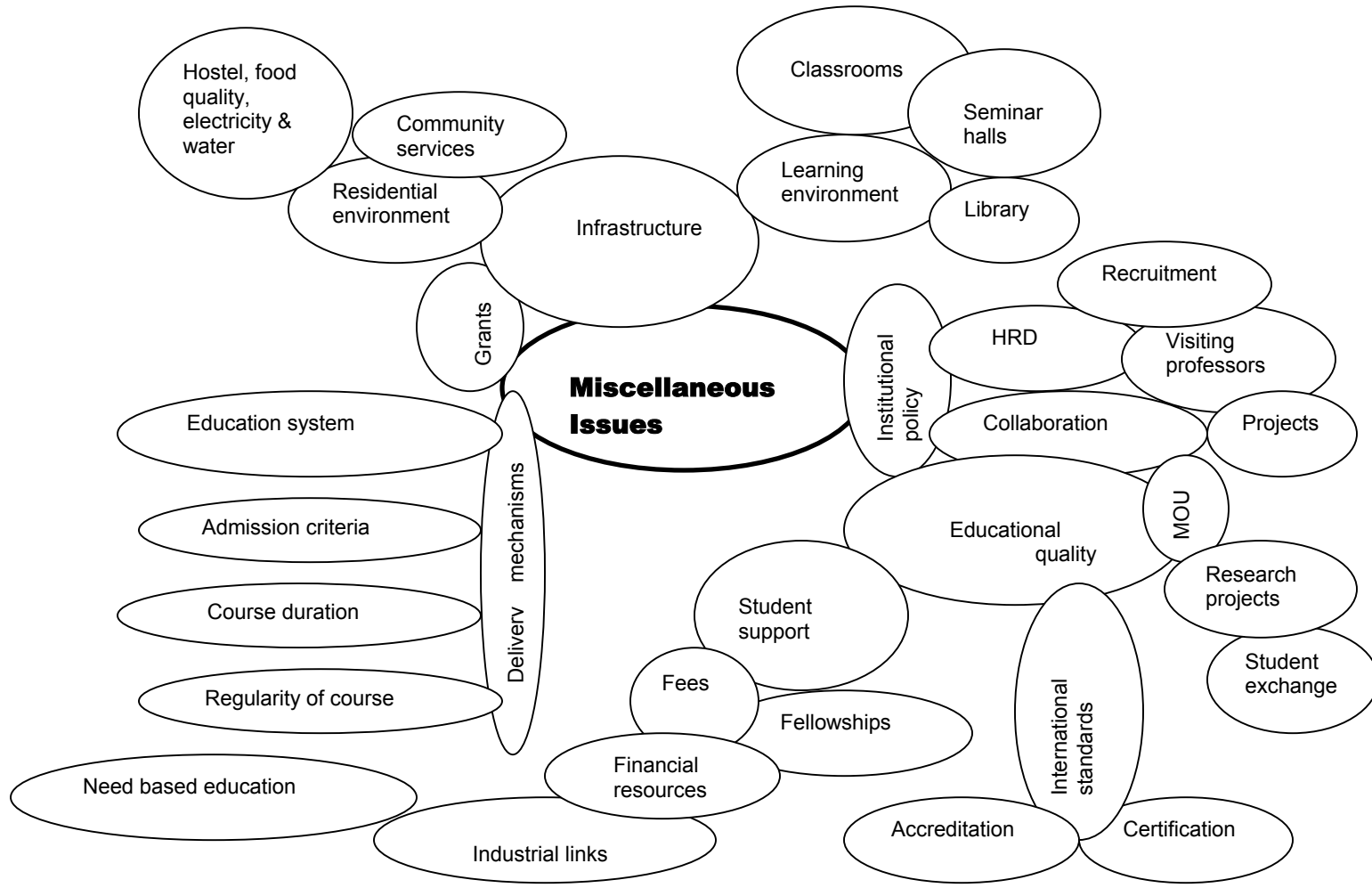


Figure 5.2: Perception of teachers in SAUs on what Indian agricultural universities can offer and to whom?

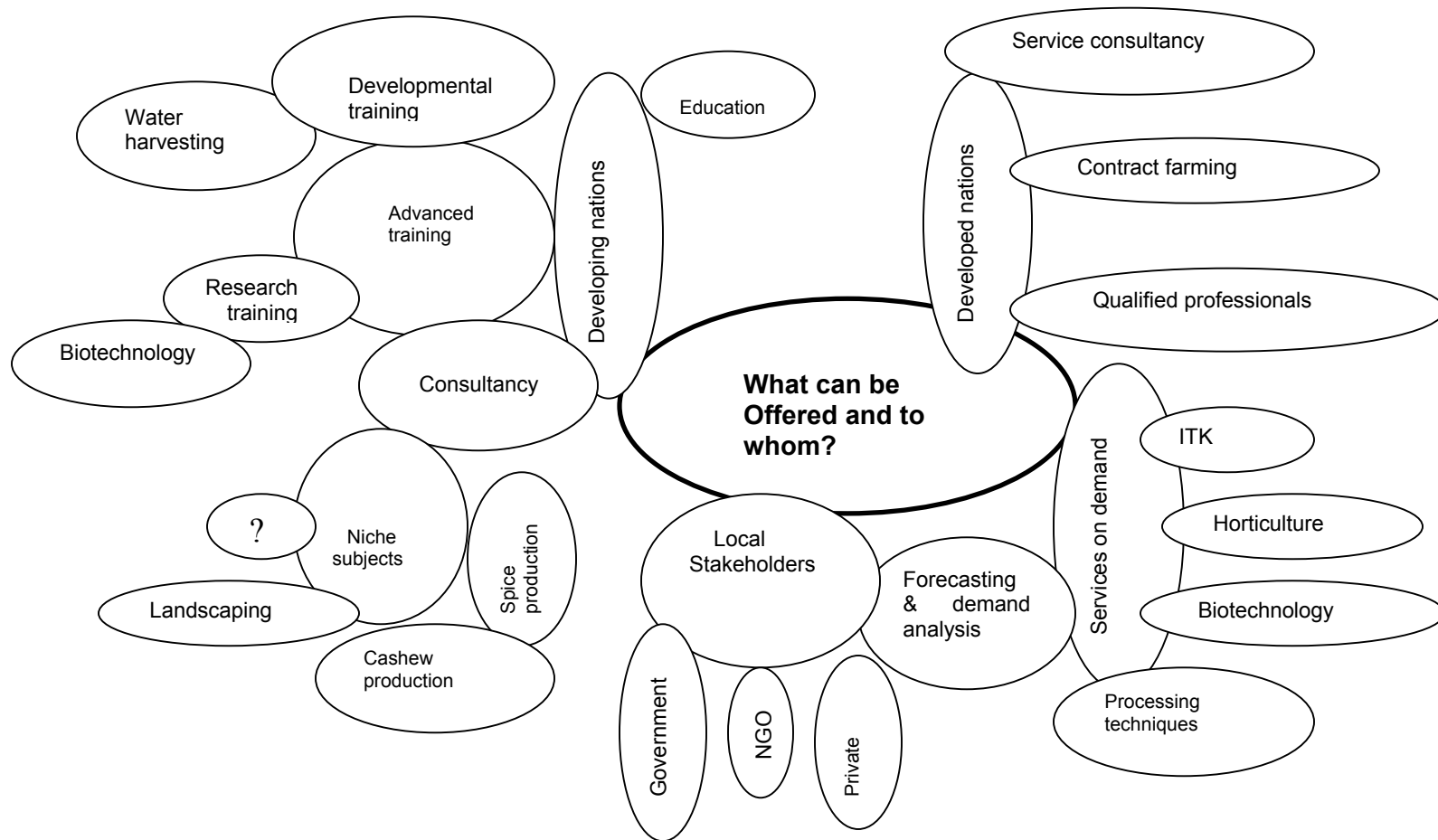
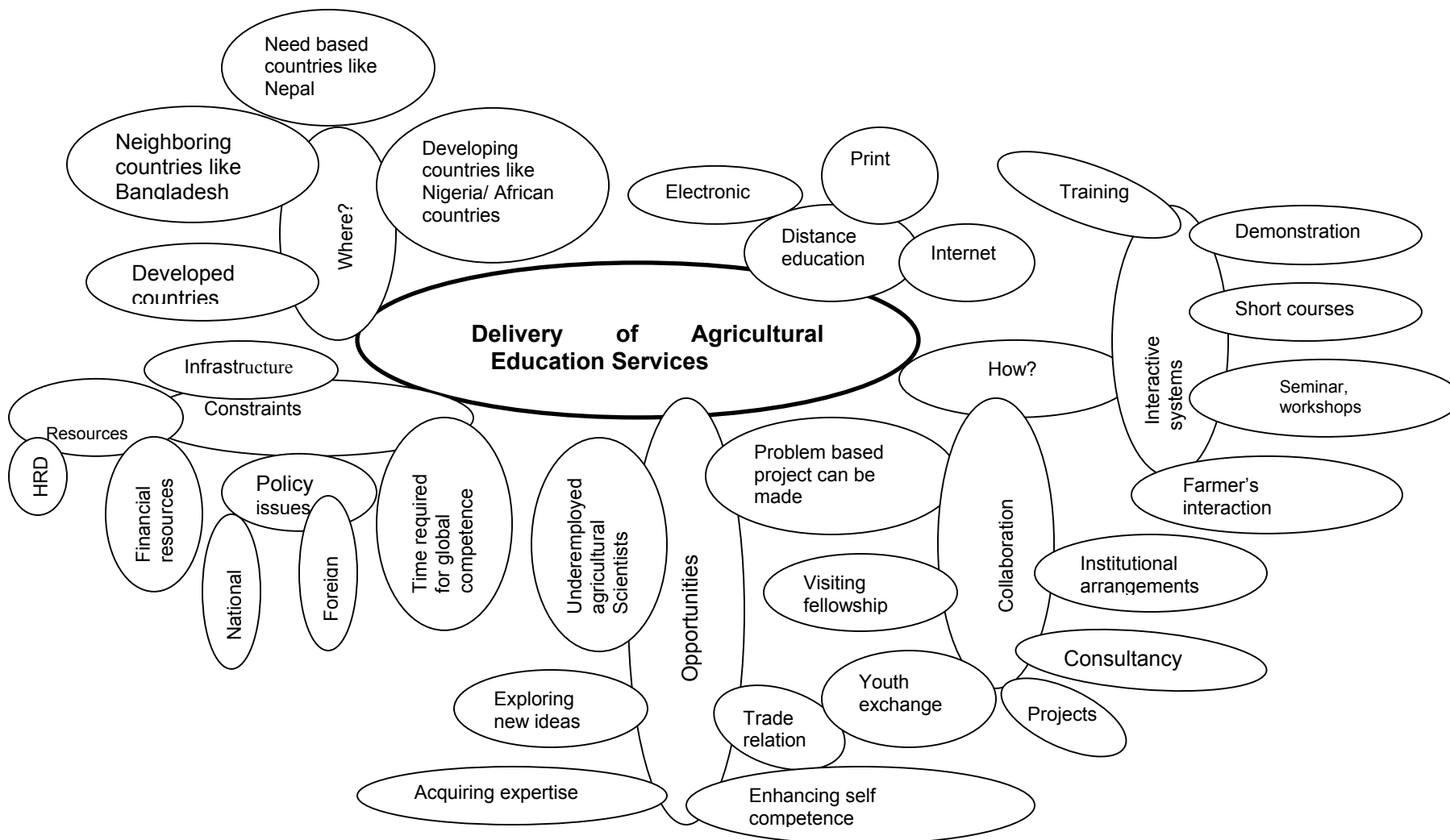


Figure 5.3: Perceptions of teachers in SAUs on extension of services of Indian agricultural higher education abroad



5.5. Concept map on SWOT analysis of Indian agricultural education system

After exposure to GATS, the trainees are divided into several groups. The trainees discussed several dimensions of SWOT and noted on large sheet of paper, other members of the group further added the new issues; the issues are clustered into various groups containing the same issues. Following are the major issues emerging from the concept map developed by the trainee faculty members of various AUs.

5.5.1. Strengths in Indian agricultural education system

1. Based on agro-climatic regions
2. Inter-disciplinary approach
3. Farmer's problem oriented
4. Earn while you learn
5. Complimentarily to end-users
6. Customized to regional condition
7. Information on value added fish products
8. Cattle wealth of India
9. Consultancy services to industry
10. ARIS cell services
11. Specialized institutions like NIRD, MANAGE, IITs, SAUs and CFTRI
12. HRD generation capacity
13. Available Infrastructure

5.5.2. Weaknesses in Indian agricultural education system

1. Inbreeding due to local faculty members
2. Poor lab facilities
3. Teaching-Theory oriented
4. Lack of interdisciplinary coordination
5. Financial crunch
6. Lack of infrastructure
7. Lack of quality teaching
8. Lesser job oriented courses
9. Uncalled integration courses
10. Selection of students (Admission criteria)

11. Weakness in Education System)
12. Updating of syllabi
13. Brain Drain
14. Teaching Methodology
15. Weakness in Evaluation System
16. Failure in extension Education
17. Improper co-ordination between ICAR and SAUs

5.5.3. Opportunities for Indian agricultural education system

1. Agricultural education to under developed countries
 - a. Faculty going to under developed countries for imparting education
 - b. Students from under developed countries coming to India for Agricultural Education
2. Establishing University centers abroad
3. Agricultural Education through distance education
4. More opportunities in traditional knowledge (ITK) like organic farming, medicinal and aromatic plants farming
5. Research in the areas of problems of the under developed countries
6. Information technology in Agriculture
7. Formulating interdisciplinary courses

5.5.4. Threats for Indian agricultural education system

1. Ecological threat from introduction of exotic species
2. Import of Education
3. Trained away from reality [training not as per the local content].
4. Money drain
5. Threats to Indian agricultural education system
6. Export of education
7. Risks to ITK
8. Patent issues on products
9. Biodiversity drain

Chapter

6



**Implications in Mode-1:
Cross border supply**

Chapter 6

Implications in Mode 1: Cross border supply

6.1. India as exporter of higher agricultural education

Cross-border supply of higher education includes higher education that takes place when students follow a course or programme of study that has been produced, and is continuing to be maintained, in a country different from the one in which they are residing. Cross-border higher education may include higher education by private and/or for-profit providers. Cross border supply of higher agricultural education to foreign students is the most reasonable mode of service that India can provide as it involves initial low establishment costs and preparedness with respect to infrastructure as compared to other modes of service as well earning more revenue for AUs.

6.1.1. Status of cross border supply in AUs

A survey of 22 AUs was done to know the status of Distance Education (DE) in these AUs in providing degree or non-degree or non-formal education in agriculture subjects as well as medium of distance education. Only one AU i.e. Central Agricultural University (CAU), Imphal is providing education in distance mode, where 332 undergraduate and 17 postgraduate students are registered. Even in this university, no PhD student is pursuing degree programme through distance mode. The medium of distance education followed by CAU, Imphal is through print media only. CAU is not providing distance education through Internet and electronic media.

6.1.2. Suitability of agriculture science as a subject for cross border supply

Agriculture being a professional subject, the constraints may be faced in supply of the borderless education. The faculty members (excluding HoDs) of AUs were asked a pertinent question for this, for which 45 percent of the respondents' thought that their subjects can be taught through borderless education. For the medium of distance education, these respondents are equally divided in favor of print, electronic and Internet media (Table 6.1).

Table 6.1: Probability of teaching agriculture subject/course through DE and its media

Response	N	%	Medium of distance education	N	%
Yes	549	45.30	1.Print	262	30.97
No	663	54.70	2. Electronic	278	32.86
Total	1212	100	3. Internet	306	36.17
No response	54				
Total response	1266				

Though substantial number of the respondents felt that their subjects could be taught through DE would they be willing to offer the agricultural courses through DE. For starting such an initiative the major responsibilities lies with the HoDs. Therefore HoDs of surveyed AUs were asked for the willingness of their colleges /divisions to provide any agricultural course through distance education. The results reveal that almost 55 percent of them did not respond to this query and among whom responded, 42 percent of them felt that their colleges or division is willing to provide agriculture course through distance education. For the medium of education delivery the HoDs are in agreement with the faculty members because HoDs are also equally divided in their opinion of three major mediums of instruction (Table 6.2). For initiating DE, the HoDs have suggested several formal and non-formal courses in agriculture that can be offered in a cross border supply mode.

Table 6.2: Willingness of college to provide any agricultural course through distance education and its media

Response	N	%	Medium of distance education	N	%
Yes	76	41.99	1.Print	44	35.20
No	105	58.01	2. Electronic	38	30.40
Total	181	100	3. Internet	43	34.40
No response	225				
Total sample	406		Total	125	100

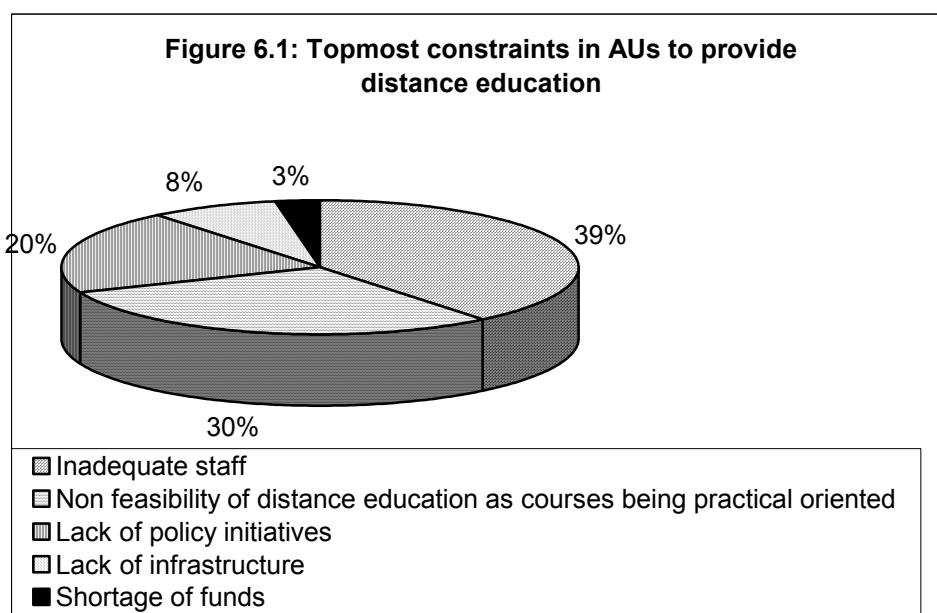
For degree courses, the important and non conventional courses suggested by HoDs are - agribusiness management, aquatic environment management, fish post harvest technology, GIS, remote sensing, journalism and mass communication, micro irrigation, green house technology, optimization and systems analysis.

In the category of non degree courses, the important ones are - certification courses and short term courses in molecular genetics, germplasm conservation, Artificial Insemination (AI) and synchronization of estrous, watershed management and environmental protection, biodiversity management, environmental science, micro propagation, hybrid seed technology, bio fertilizer, agriculture journalism, dry land

farming, integrated farming system, post harvest technology, nursery and garden management, vegetable seed production and technology, orchard management, horticultural crops, dairy farming and processing, poultry farming. For exhaustive list of the courses please refer Annex 6.1.

6.1.2.1. Constraints in offering DE by AUs

Many respondents felt that their colleges or divisions are not in position to provide agriculture course through distance education. They substantiated their stand by listing several constraints as given in figure 6.1. The analysis of these listed constraints reveals that inadequacy of staff was perceived as the topmost constraint followed by non-feasibility of distance education of agricultural subjects on account of being practical oriented course, lack of policy initiatives by AUs, ICAR and Government, lack of infrastructure at the AUs, and the shortage of funds was listed as the constraint of least importance.



6.2. University websites as a means to attract international students

Limitations imposed by poor websites of the AUs in India can be a severe drawback for the delivery of the education services not only in Mode-1 but also in Mode-2 and 3. Effective websites are influential means of DE, attracting foreign students, and also drawing attention of foreign universities for the future collaborations. Therefore the websites of all the AUs were studied and compared with the websites of University of Pune and Delhi University, as these two universities in India were with relatively high

proportions of international students. The major characteristics of the web sites were assigned a weighted score to derive the final score and rankings of the universities under study. The web sites of 38 State Agricultural Universities, 5 Deemed Universities, 3 Central Universities, 3 Private Universities and top five universities attracting foreign students in India have been analyzed on the basis of a carefully developed performance (please see Annex 3.8) that contained the following major items of observation.

1. Information about the courses (type of courses, number of seats in each course, number seats for foreign students),
2. Information about the financial matters (tuition and hostel fee for Indian and foreign students),
3. Information about admission procedures,
4. Faculty profiles,
5. Information about quality records (national and international ranking, placement records),
6. Online student support services (general query, admission query, registration for admissions).

The major parameters were assigned a weighted score to get the final score for ranking of the universities under study (Table 6.3). Out of the 38 SAU web sites analyzed, only 25 sites could be opened. PAU ranked first, followed by ANGRAU, CSKVV, JNKVV and KAU. PAU ranked first as it provided detailed information regarding the number of seats for Indian and foreign universities at each of the UG, PG and the PhD levels. It also provided the information on the fees structure for each course both for the Indian and foreign students (Table A.6.1).

Among DU's, Allahabad Agricultural Research Institute ranked first, followed by IVRI and CIFE. Allahabad Agricultural Research Institute ranked first because it provided detailed information regarding the number of seats for Indian and foreign universities at each of the UG, PG and the PhD levels. It also provided the information on the fees structure for each course for the foreign students. In addition to these it facilitated on-line registration, which would be of great help to foreign students. It also provided placement information for the students.

Table 6.3: Parameters of website analysis with their weights

S.N.	Parameter	Weight
1.	Web site	4
2.	Search Accessibility	3
3.	Information about the Courses	
	1. Type of courses	2
	2. No. of seats in each course	3
	3. No. of seats for foreign students	4
4.	Information about the Fees	
	1. Tuition fee (Indian)	1
	2. Hostel fee (Indian)	1
	3. Tuition fee (Foreign student)	2
	4. Hostel fee (Foreign student)	2
5.	Information about Admission Procedure	
	1. For Indian	1
	2. For Foreigner	2
6.	Faculty profile	
	1. Just name	2
	2. Detailed profile	3
7.	Information about Quality Records	
	1. National ranking	2
	2. International ranking	3
8.	Placement records	4
9.	Query	1
10.	Online Registration	3
11.	Admission query	2

Among non- AUs the Delhi University ranked first, followed by university of Pune and University of Mysore. University of Delhi provides information on admission procedure and also gave information on its quality record. In case of private universities ICFAI and ISB ranked first followed by Manipal Academy of Higher Education. In case of Central Universities, BHU ranked first followed by AMU and Visva Bharathi.

6.3. India as importer of higher agricultural education

Cross border supply of higher agriculture education by foreign universities to Indian students has been discussed in this section. Costs are a major deterrent in cross border supply of education for a foreign university. Conventional distance education is well developed in Asia and costs much less than traditional education. Foreign providers with higher costs cannot compete with local education provision. To succeed, cross-border providers must devise a business model that can take them beyond the elite to reach out to the masses.

6.3.1. Role of AUs in being partner with foreign universities for DE

Out of 406 HODs only 147 have responded to the question of their willingness towards the participation in conduction of joint degree program with foreign universities through distance education mode (Table 6.4). If foreign universities are allowed to provide degree to Indian students through distance education, majority of the respondents (71%) felt that their colleges/ division would be willing to be a partner with foreign universities for joint degree program. In a collaborative approach of DE, foreign universities and AUs can tie up themselves in conducting either practical classes, theory classes or just for examination purpose, for which HODs of AUs were equally divided for theory classes (71%), examination (71%) and practical classes (67%).

Table 6. 4: Willingness of HODs of AUs as partner in DE with foreign universities

Response	Practical		Theory		Examination	
	N	%	N	%	N	%
Yes	99	67.35	103	71.03	103	70.55
No	48	32.65	42	28.97	43	29.45
Total	147	100	145	100	146	100

6.3.2. Impact of DE on mobility of Indian students going abroad

It is assumed that fallout of above kind of arrangement may be the reduction in the mobility of Indian students going to foreign universities. To verify this, a question was asked from 1266 respondents, 44 of them have not responded for this question. Those who have responded, around 51 percent of them have agreed to it. Rest 49 percent of the respondents felt that in spite of distance education provided by any foreign university in India, might not reduce the mobility of Indian students going abroad as Indian students are not only behind foreign university's degree certificate but also they want to experience the exotic life style abroad, taste the varied cultural feast of host country as well utilize ample opportunities available in developed countries.

Chapter

7



**Implications in Mode-2:
Consumption Abroad**

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Chapter 7

Implications in Mode 2: Consumption Abroad

7.1. India as exporter of higher agricultural education

Consumption abroad refers to the movement of consumers from one country to another, such as students studying abroad. More the export of Indian higher agriculture education by AUs more the revenue generated to the country. A schedule of status information received from 22 nodal officers provided the information such as foreign students strength in their AUs, quota reservation in AUs for foreign students, collaborations, tie ups, joint ventures of AUs with any foreign institute/ university in research.

7.1.1. Status of foreign student strength in AUs

Out of 22 AUs, only 9 universities (41 %) have foreign students studying and no foreign students were reported from rest 13 AUs. GBPUAT, Pantnagar is having highest number of foreign students (38 %) inclusive of UG, PG and PhD programmes followed by PAU, Ludhiana (29 %) and MPKV, Rahuri (10 %). Percent of foreign students to the total student strength of the university was calculated and found that only 0.53 percent of total students are foreign students in AUs.

Table 7.1: Analysis of foreign students strength in AUs

S. N.	University	Foreign Students*				% of total foreign students in AUs	Total Student strength (Indian & foreign students)	% Foreign students to the total student strength of the university	Countries to which students belong
		UG	PG	PhD	Total				
1.	GBPUAT	12	12	5	29	37.66	3142	0.92	Srilanka, Yemen Ethiopia, Bhutan Vietnam, Sudan Bangladesh USA, Australia Kazakhstan Mozambique Timor, Nepal Bhutan, Guyana Czech Republic
2.	PAU	12	5	5	22	28.57	2154	1.02	
3.	MPKV	-	5	3	8	10.39	799	1.00	
4.	ANGRAU	-	3	2	5	6.49	3621	0.14	
5.	HAU	2	1	2	5	6.49	1661	0.30	
6.	MPUAT	2	1	1	4	5.19	1727	0.23	
7.	CIFE	-	-	2	2	2.60	144	1.39	
8.	AAU	2	-	-	2	2.60	1210	0.17	
	Total	30	27	20	77	100	14458	0.53	

*AMU, Aligarh is having 248 foreign students (137 UG, 44 PG, 67 PhD), but the information of agriculture faculty is not available. Percent of foreign students strength in UG-39%, PG- 35 %, PhD-26 % out of total 77.

These foreign students are mostly native of developing countries like Srilanka, Yemen, Ethiopia, Bhutan, Vietnam, Sudan, Bangladesh, Kazakhstan, Mozambique, Democratic Republic of Timor-Leste, Nepal, Bhutan, Guyana and Czech Republic. AMU, Aligarh is having students from USA and Australia (Table 7.1).

7.1.2. Reasons for less number of foreign students in AUs:

Considering the less number of foreign students studying in AUs the question arises what might be the reasons for it¹. Faculty members were consulted to quote reasons for less foreign student's strength, for which they have responded with reasons such as absence of strategic infrastructure development (28%) as most critical constraint followed by lack of marketing strategy (19%), dearth of strategies for education quality and standards, improper financial strategy, incompetent strategic policy development, no strategic linkages and collaborations, inefficient HRD strategy, weak student support services, personal preference and choices of foreign students and system weakness (Table 7.2). The detailed analysis of the main reasons contributing to lesser number of internaional students in AUs are given in table A.7.1. The important factors in these main reasons are listed as below:

Absence of strategic infrastructure development

- Lack of good general infrastructure
- Unfavorable geographic locations in terms of geo climatic features, airline connections etc

Poor marketing strategy

- Poor publicity and advertisement of the university and course
- Lack of awareness and information about AUs

Dearth of strategies for education quality and standards

- Lack of designing course, need based degree, curriculum,
- Poor quality education/ teaching of International standards and accreditation,

Improper financial strategy

- Scholarships, assistantships, incentives, loans, funds,
- Financial crunch/crisis, fees structure,

Incompetent strategic policy development

¹ Pawan Agrawal (2006) on page 14 records that public universities are not growing in terms of number of institution and number of students, while unaided DUs and private unaided colleges and private universities are have high growth. The foreign institutions have started emerging; all these would face a great challenge to AUs.

- University policy
- Government policy

No strategic linkages and collaborations

- No communication, interaction, counseling, co-operation, liasoning
- No collaboration and exchange offers

Inefficient HRD strategy

- Lack of qualitative attributes and personality traits of teacher,
- Less standard teaching quality

Weak student support services

- International placement cell and job opportunities for foreign students in AUs.
- Work permit for foreign students is restricted for limited hours

Personal preference and choices of foreign students

- More preference given to developed countries
- Affinity towards other professional subjects other than agriculture

System weakness

- Socio cultural problems
- Bureaucratic setup, red tapism, corruption and political interference.

Table 7.2: Reasons contributing to lesser number of internaional students in AUs

S. N.	Reasons	Responses	%
1	Absence of strategic infrastructure development	429	28.04
2	Poor marketing strategy	287	18.76
3	Strategies for education quality and standards	171	11.18
4	Improper financial strategy	165	10.78
5	Incompetent strategic policy development	121	7.91
6	No strategic linkages and collaborations	116	7.58
7	Inefficient HRD strategy	96	6.27
8	Weak student support services	76	4.97
9	Personal preference and choices of foreign students	50	3.27
10	System weakness	19	1.24
	Total	1530	100

7.1.3. Collaboration, tie up, joint venture of AUs with foreign institute/ university in research

AUs having collaboration, tie up, joint venture with any foreign institute/ university in research will be definitely a crucial initial step towards the export of educational services. These collaborations will lead to the process of bringing more foreign students

to AUs. Both nodal officers and HoDs of AUs were enquired whether their AUs and colleges/ divisions are having the collaboration with foreign institute/ university and is it leading to foreign students entry?

Table 7. 3: Response of nodal officers for collaboration of AUs with foreign universities

Response	N	%	If Yes, Response	N	%
Yes	8	36.36	Collaboration leading to foreign students entry	3	37.5
No	14	63.63	Collaboration not leading to foreign students entry	5	62.5
Total	22	100	Total	8	100

Out of 22 AUs, only 8 AUs (36 %) are having collaboration, tie up, joint venture with foreign institute/university in research and education (Table 7.3). Having collaboration with foreign institute/university has helped 37 percent of the AUs in bringing foreign students to their university.

Only 178 HoDs responded out of 406 HoDs for this query, among them also only 16 percent responded that their colleges/ division is having collaboration with foreign universities (Table 7.4). For the further question whether this collaboration is leading to foreign students entry, 45 percent of them gave positive response and rest 55 percent of HoDs said exiting collaboration with foreign universities is not leading to foreign students entry.

Table7.4: Response of HoDs for collaboration of colleges/division with foreign universities

Response	N	%	If Yes, Response	N	%
Yes	29	16.29	Collaboration leading to foreign students entry	13	44.83
No	149	83.71	Collaboration not leading to foreign students entry	16	55.17
Total	178	100	Total	29	100

7.1.4. Quota for foreign students in AUs

To enhance inflow of the foreign students to AUs, reservation of quota is a most important step. Only 8 among 22 responding AUs are having quota reserved for foreign

Table 7.5: Quota for foreign students by AUs

S. N.	University	% Quota for foreign students	
		UG	PG
1.	ANGRAU	10	-
2.	GBPUAT	5	-
3.	MPKV	-	8
4.	AMU	5	5
5.	OUAT	5	5
	Average	5	7

students including NRI, PIO to study in their universities. On an average respondent AUs are reserving 5 percent quota in UG programme and 7 percent quota in PG programme for foreign students (Table 7.5).

7.1.5. Seats allocation to foreign students in AUs

To analyze how much percentage of seats need to be allocated to foreign students in UG, PG and PhD degree programmes in AUs, HoDs were asked to quote the same. As majority of the respondents (78%) were unable to comment on this issue, universities must have a serious thinking on this subject. The percentage of seats recommended by remaining 22 percent of respondents were clustered into different ranges such as 1-10, 11-20, 21-30, 31-40 and more than 41 percent. Approximately 16 percent of the respondents favor the allocation of seats to foreign students in various degree programmes in their college or division ranging between 1-10 percent of the available seats (Table 7.6) followed by 4 percent of them recommending 11-20 percent of seats. None choose the range of 31-40 percent of seats allocation to foreign students in AUs.

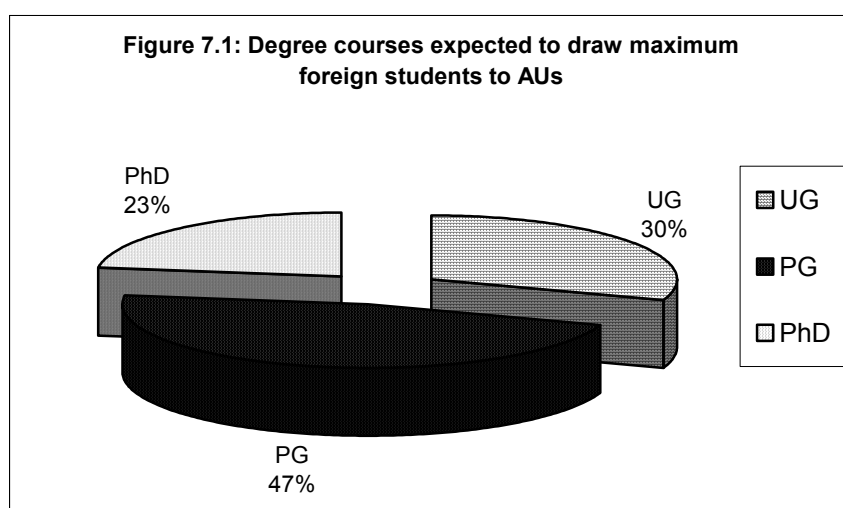
Table 7.6: Proposed allocation of seats to foreign students in AUs

% Range	UG		PG		PhD		Total	
	N	%	N	%	N	%	N	%
1-10	68	16.75	67	16.50	57	14.04	192	15.76
11-20	13	3.20	19	4.68	14	3.45	46	3.78
21-30	1	0.25	9	2.22	9	2.22	19	1.56
31-40	0	0.00	0	0.00	0	0.00	0	0.00
>41	0	0.00	3	0.74	3	0.74	6	0.49
No response	324	79.80	308	75.86	323	79.56	955	78.41
Total	406	100	406	100	406	100	1218	100

7.1.6. Degree course expected to draw large number of foreign students to AUs

After discussing quota reservation for foreign students in AUs, collaboration of AUs with foreign universities for research and seats to be allocated to foreign students in AUs, its important to know which degree course in AUs is expected to draw maximum foreign students, for which HoDs were consulted to give their assumptions. HoDs of AUs considered that PG course (47%) is expected to draw maximum foreign students for study in AUs followed by UG programme (30%) and PhD (23%) (Figure 7.1). This estimation of expectancy of foreign students to AUs is also substantiated with the present foreign student strength that is UG degree programme having 39 percent of the

total foreign student strength; PG programme (35 %) and PhD (26 %) studying in surveyed 8 AUs (Table 7.1). They also recommended few diploma and short term courses which are bound to attract maximum foreign students like specialized skill oriented courses for animal biotechnology, aquaculture, capacity building for SPS compliant livestock production, diploma in dairy engineering, farm machinery, seed science and technology, International training programmes, professional education, short courses on transfer of technology, short duration and practical oriented courses, agri-business management, PG diploma courses in home science such as dietetics and human nutrition, catering and institutional management, pre school management, guidance and counseling for adolescence, marriage



7.1.7. Nations expected to send large number of foreign students for study in AUs

Foreign countries from which students are coming to India for education were categorized into 4 groups such as Developed nations, developing nations of Asia, developing nations of Africa and developing nations of Latin America and HoDs were asked to prioritize these countries on the basis of which category of country is expected to send maximum foreign students for study in AUs (Table 7.7). Prioritized categories were given weights and rankings were calculated. They perceived developing nations of Asia (1268 score) as most expected category of nation to send maximum number of foreign students to study in AUs followed by developing nations of Africa (1083 score), Latin America (600 score) and then by developed nations (442 score). This would be correlated to the fact that foreign students presently studying in 8 surveyed AUs are from the countries such as Srilanka, Yemen, Ethiopia, Bhutan, Vietnam, Sudan, Bangladesh,

Kazakhstan, Mozambique, Democratic Republic of Timor-Leste, Nepal, Bhutan, Guyana and Czech Republic (Table 7.1).

Table 7.7: Prioritized list of categories of nation expected to send large number of foreign students in AUs

Categories of Nations	Priority				Total	Weighted score*	Rank
	1	2	3	4			
Developed nations	27	21	17	237	302	442	4
Developing nations of Asia	218	116	23	2	359	1268	1
Developing nations of Africa	124	169	33	14	340	1083	2
Developing nations of Latin America	4	27	232	39	302	600	3

*Σ Priority 1x4 + Priority 3x3 + Priority 2x2 + Priority 4x1

7.1.8. Standard of living conditions for international students at AUs

Before planning strategies to attract foreign students, it's the primary concern to know whether AUs have appropriate living conditions to meet the demands of international students². The results of the information received from HoDs is presented in table 7.8. Majority of the HoDs (72%) in AUs felt that their universities have good living conditions such as hostel, food, Internet and recreational facilities for international students to study in India. Only 28 percent of them felt that the living conditions are not appropriate for international students in their universities. Internet facilities were perceived as good by 89 percent of the respondents, hostel (70 %), recreation facilities (65 %) and food (64 %).

Table 7.8: Perception of HoDs about availability of boarding and lodging facilities of international standard at AUs

Facilities	Yes	% respondents	No	% respondents	Total
Hostel	268	70.34	113	29.66	381
Food	245	64.64	134	35.36	379
Internet	341	88.57	44	11.43	385
Recreation	239	64.77	130	35.23	369

7.1.9. Annual Fees structure proposal for foreign students in AUs

Around 95 percent of the respondents were unable to propose fees structure to be implemented to the foreign students willing to study in AUs. They considered that this question is supposed to be posed to administration council as well felt it to be a policy matter in which they have no stand of point. Annual fees proposed by rest of the 5

²Rama Rao, D. and U. Muralidhar (1994) on page C3-40 report that infrastructure facilities are not uniform and most of the available facilities were at university headquarters only.

percent respondents were bifurcated into 4 ranges as fees less than 1 lakh, 1 to 2 lakhs, 2-3 lakhs and more than 3 lakhs for UG, PG and PhD degree programmes in various faculties. For UG course, majority of the responding HoDs proposed fees less than 1 lakh in all the faculties such as Agriculture, Dairy science, Engineering, Fisheries, Forestry, Home science, Horticulture and non-agricultural courses except Veterinary science, for which 1 to 2 lakhs were suggested (Table 7.9).

For PG course, majority of the HoDs proposed fees range of 1 to 2 lakhs for Dairy Science, Engineering, Fisheries, Forestry, Horticulture and non-agricultural courses, fees less than 1 lakh for agriculture and Home science, where as fees more than 3 lakhs for veterinary science course was suggested.

For PhD course, most of the respondents suggested fees range of 1-2 lakhs for Agriculture, Engineering, Forestry and Home science, less than 1 lakh for non-agricultural courses, 2 to 3 lakhs for Dairy science and Horticulture and more than 3 lakhs for Veterinary science and Fisheries (Table A.7.2).

Table 7.9: Majority of HoDs in different fees range proposed for foreign students in different faculties at AUs

S. N.	Faculty	UG Fees range (Rs)				PG Fees range (Rs)				PhD Fees range (Rs)			
		<1 lakh	1-2 lakhs	2-3 lakhs	>3 lakhs	<1 lakh	1-2 lakhs	2-3 lakhs	>3 lakhs	<1 lakh	1-2 lakhs	2-3 lakhs	>3 lakhs
1	Agriculture	√	-	-	-	√	-	-	-	-	√	-	-
2	Dairy Science	√	-	-	-	-	√	-	-	-	-	√	-
3	Engineering	√	-	-	-	-	√	-	-	-	√	-	-
4	Fisheries	√	-	-	-	-	√	-	-	-	-	-	√
5	Forestry	√	-	-	-	-	√	-	-	-	√	-	-
6	Home Science	√	-	-	-	√	-	-	-	-	√	-	-
7	Horticulture	√	-	-	-	-	√	-	-	-	-	√	-
8	Veterinary Science	-	√	-	-	-	-	-	√	-	-	-	√
9	Other courses	√	-	-	-	-	√	-	-	√	-	-	-

7.1.10. Average annual fees for foreign students:

Average annual fees proposed by the responding HoDs are given in table 7.10. On average annual fees proposed for UG course was Rs. 126187, PG course was Rs. 187221 and for PhD was Rs. 246964. Veterinary courses have been proposed highest fee, the details are given in the referred table.

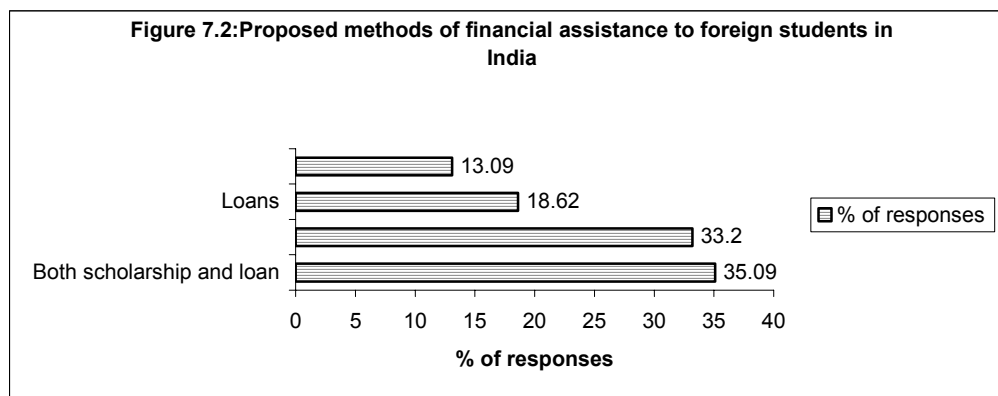
Table 7.10: Average annual fee * proposed for foreign students in different faculty

S. N.	Subjects	Annual fee (Rs.)		
		UG	PG	PhD
1	Agriculture	100214	189619	350723
2	Dairy Science	144444	214333	279400
3	Engineering	143000	184044	153563
4	Fisheries	119090	217188	293750
5	Forestry	110000	119000	163333
6	Home Science	92000	138118	228722
7	Horticulture	95833	252333	322857
8	Veterinary Science	251816	232353	282206
9	Other courses	79286	138000	148125
	Average annual fees	126187	187221	246964

* Average of the fees as proposed by the responding HoDs

7.1.11. Financial assistance to boost the inflow of foreign students to AUs

As fees structure proposal was finalized, the next step was to know which form of financial assistance should be given to foreign students by ICAR/University/bank in order to increase their inflow to AUs. Options such as providing both scholarship and loan or providing only loans or providing only scholarships or unable to answer was given to faculty members of AUs (Figure 7.2). Thirteen percent of them couldn't answer, whereas majority of the responding faculty members felt foreign students should be given financial assistance both in the form of scholarship and loan (35%), followed by assistance only through scholarships (33%), assistance only through loans (19%)³.



7.1.12. Career counseling units in AUs and export of education

Career counseling units for foreign students those who are willing to come to AUs for study are most important in highlighting the strong points of their university on

³ Pawan Agrawal (2006) on page 30 present the fact that out of the total loan portfolio of public sector banks the share of student loan is 3.77%. In comparison, 85 % students in UK and Sweden, 50% in USA and Canada and 77 % in Australia had availed of student's loans in recent years. The number of student loan accounts are increasing very fast.

par with other reputed universities as well giving them the overall picture of course details, admission procedure, fees structure, financial assistance, examination pattern, infrastructure facilities of college and hostel, geographic advantage of the college where it is situated. So that any foreign student approaching the university will get first hand information about the university and course, which in fact help them to take proper decision in joining their course of choice. AMU, Aligarh is the only university among 22 universities to have career-counseling unit for foreign students willing to come to their university for study.

7.1.13. Export potential of Indian rural items due to foreign students' presence in AUs

Majority of HoDs (71%) felt presence of foreign students in AUs would boost the export of rural items such as traditional art/artifacts/music/rural technology and rural products from local region. They were asked to give two most important rural items that might be exported from their area based on their local knowledge. Those rural items were categorized into 12 main categories (Table 7.11). Most of the respondents considered handicrafts, traditional arts and crafts as most potential item followed by rural indigenous technologies, Indigenous fruits, vegetables, flowers, plantation crops, spices,

Table 7.11: Prioritized list of rural goods and services likely to be exported by the international students in AUs

S. N.	Important rural items	No.	% of responses
1	Handicrafts, traditional arts and crafts	142	29.04
2	Rural indigenous technologies	82	16.77
3	Indigenous fruits, vegetables, flowers, plantation crops, spices, aromatic and medicinal plants and their varieties	59	12.07
4	Textiles, embroidery	59	12.07
5	Rural niche products	46	9.41
6	Indian music, folk dance, drama	30	6.13
7	Food items and processed foods	28	5.73
8	Traditional paintings	14	2.86
9	Animal and animal products	12	2.45
10	Leather goods	9	1.84
11	Natural products	6	1.23
12	Rural services	2	0.41
	Total	489	100

aromatic and medicinal plants and their varieties, Textiles and embroidery, Rural niche products, Indian music, folk dance and drama, Food items and processed foods, Paintings, Animal and animal products, Leather goods, Natural products and rural

services. Extensive list of exportable rural goods and services can be referred in Annex 7.1.

7.2. Survey of foreign students in AUs

Survey of foreign students was done to get the feed back of their views on AUs and education systems. Out of 56 foreign students surveyed, 33 were from AUs such as PAU, UAS (D), ANGRAU and CIFE, whereas rest 23 students were from non-AUs like Osmania University and University of Hyderabad (Table 7.12). The data analyzed below pertains to foreign students studying in AUs.

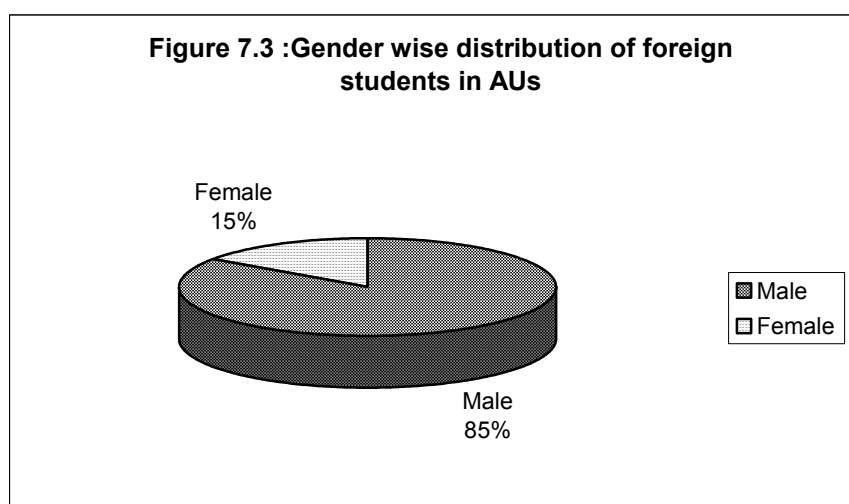
Table 7.12: List of universities surveyed

S. N.	University	No. of students
Agricultural University		
1	PAU	20
2	UAS, Dharwad	8
3	ANGRAU	3
4	CIFE	2
Non Agricultural University		
5	Osmania University	12
6	University of Hyderabad	11
	Total	56

7.2.1. Foreign student's profile

7.2.1.1. Gender

Out of 33 foreign students interviewed in AUs, 85 percent were male and 15 percent were female students (Figure 7.3). So strategies should be worked out to encourage more female foreign students admission in AUs by providing congenial environment for their stay and study in India.



7.2.1.2. Native Countries of foreign students in AUs

Most of the foreign students surveyed were from Sri Lanka (33%) followed by Mozambique (30%), Nepal (9%), Ethiopia (6%), Guyana (6%) and one each student from Canada, Sudan, Timor Leste, Uzbekistan and Yemen (Table 7.13).

Table 7.13: Native Countries of foreign students in AUs

S. N.	Country	No. of students	%
1	Sri Lanka	11	33.33
2	Mozambique	10	30.30
3	Nepal	3	9.09
4	Ethiopia	2	6.06
5	Guyana	2	6.06
6	Canada	1	3.03
7	Sudan	1	3.03
8	Timor Leste	1	3.03
9	Uzbekistan	1	3.03
10	Yemen	1	3.03
	Total	33	100

7.2.1.3. Course of study

Among the 33 foreign students surveyed, majority of them (46%) were pursuing UG course followed by PG and PhD (27% each) in AUs (Table 7.14).

Table 7.14: Strength of foreign in different courses in AUs

Course	No. of students	%
UG	15	45.45
PG	9	27.27
PhD	9	27.27
Total	33	100

7.2.2. Objectives of foreign students to study in India

While it is important to know the objectives of foreign students studying in India, one survey revealed that only 29 out of 33 students gave their response. Maximum foreign students had long-term objective of enhancing their knowledge in the field of agriculture, while few had medium term objective such as taking up developmental activities at their nation after completion of course in India and rest had immediate objective of pursuing the course and successfully completing it (Box7.1).

Box 7.1: Objectives of foreign students studying in India

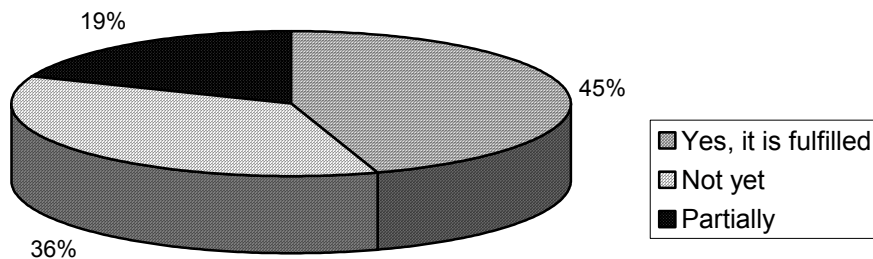
- ❖ Seventy six percent of the students have long term objective i.e. they want to enhance their knowledge in the field of agriculture
- ❖ Seven percent of the students have medium term objective i.e. taking up developmental activities at their nation after completion of course in India
- ❖ Seventeen percent of the students have immediate objective i.e. to pursue the course and successfully complete it

For the above stated objectives, it was reviewed again whether their objective has been fulfilled or not, for which 31 students responded out of 33 students. Most of them responded positively that their objectives has been fulfilled, 35 percent of them felt their objectives have not yet been fulfilled and 19 percent of the students felt partially their objectives have been fulfilled (Box 7.2 and Figure 7.4).

Box 7.2: Fulfillment of foreign student's objectives

- ❖ Forty five percent of the foreign student's objectives has been fulfilled completely
- ❖ Thirty six percent of the foreign student's objectives has not yet fulfilled
- ❖ Nineteen percent of the foreign student's objectives has been fulfilled partially

Figure 7.4 : Attainment of foreign students' objectives of study in AUs



7.2.3.Financial Implications

7.2.3.1. Scholarship for foreign students

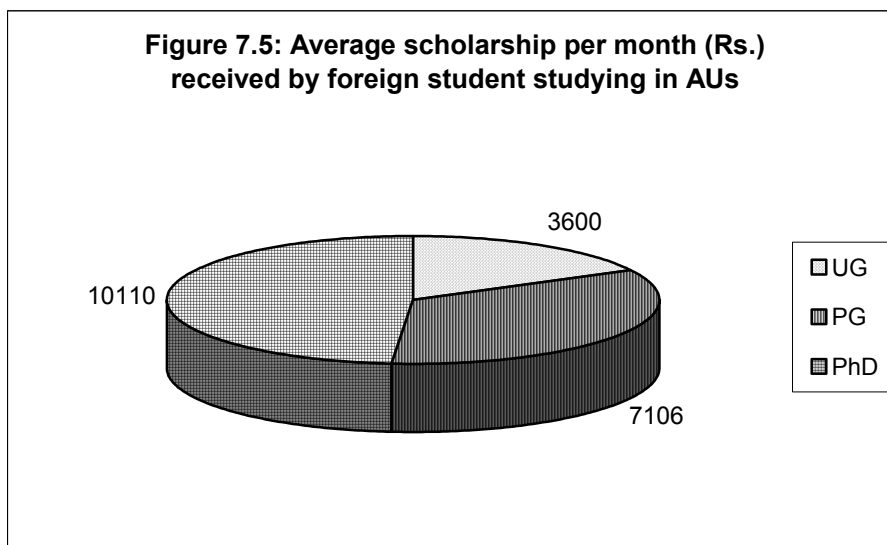
Financing of education is the major factor for any foreign student to pursue their education in other country. Out of 33 foreign students, most of them are getting

scholarships (97%) and only 3 percent of them are studying through self-finance. The source of scholarship was reviewed among the scholarship holders and found that most of them got their scholarship from Indian Council for Cultural Relations (ICCR) (44%) and rest of foreign students got their scholarship from Center for Agricultural Research Planning (CARP) Srilanka, Nepal Aid Fund, Commonwealth Scholarship and Ethiopian Government (Table 7.15).

Table 7.15: Source of scholarship for foreign students

S. N.	Source	No. of students	%
1	ICCR	14	43.75
2	CARP	11	34.38
3	Nepal Aid Fund	3	9.38
4	Common Wealth Scholarship	2	6.25
5	Ethiopian Government	2	6.25
	Total	32	100

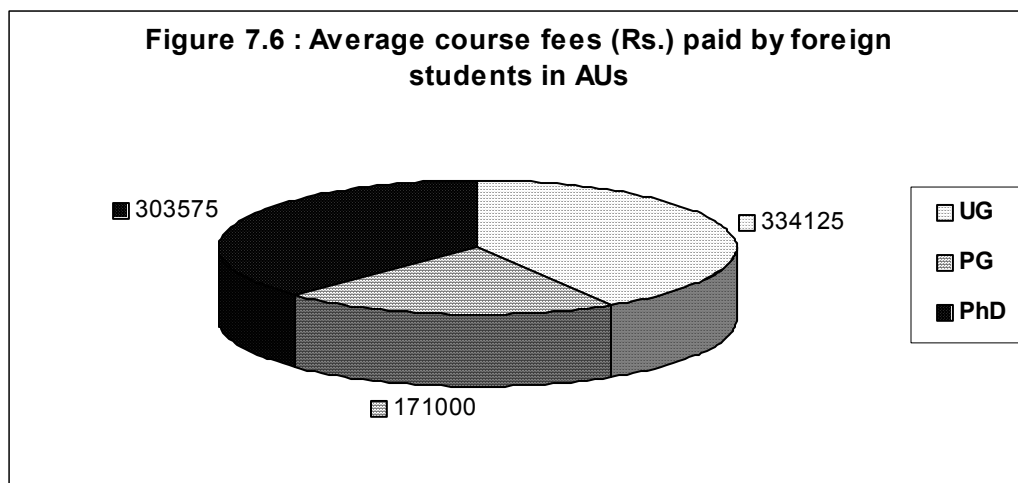
Amount of scholarship per month per foreign student studying in different courses in AUs was calculated and found that on an average UG foreign students are getting Rs 3600 per month where as PG students are getting Rs 7106 per month and PhD students are getting Rs.10110 per month (Figure 7.5).



7.2.3.2 Course Fee

The international students at AUs were asked about the total course fee paid by them to the AUs, the analysis of the information is presented in figure 7.6. The analysis

reveals that on an average undergraduate students paid Rs 3.34 Lakhs, PG students Rs 1.71 Lakh, and Doctoral students paid around Rs three lakh.



7.2.3.3. Expenditure of foreign students in India

7.2.3.3.1. Monthly living Expenses

Average monthly living expenses in India for a foreign student was calculated based on their individual expenditure details provided by the foreign students. On an average an individual spends Rs 9633 per month in which highest expenditure will be for food (26%) followed by miscellaneous expenditure (24%) like international telephone bills, postal service, internet, fax, purchasing books, vehicle maintenance as well as touring for relevant documentation related to their field of study (Table 7.16). Sending souvenirs for relatives in their home country (17%) also takes major share in foreign student's expenditure followed by recreation and entertainment (13%), accommodation expenses (11%) and personal grooming (9%).

Table 7.16: Monthly living expenses of foreign students

S. N.	Items	Average expenses (Rs.)	%
1	Food	2516	26.12
2	Miscellaneous	2293	23.80
3	Souvenirs for relatives in their home country	1635	16.97
4	Recreation and Entertainment	1230	12.77
5	Accommodation	1104	11.45
6	Personal Grooming	854	8.86
	Total	9633	100

7.2.3.3.2. Annual non-recurring expenditure of foreign students

Annually on an average a foreign student in India will be spending Rs.16056/- on sports, health, insurance, books, study material and other miscellaneous expenses.

Books and study material (36%) will take major share in annual expenditure followed by miscellaneous expenditure (25%) like computer purchase, telephone services, shopping. They spend 23 percent of their annual expenditure for insurance, 10 percent on health and 6 percent on sports (Table 7.17).

Table 7.17: Annual non recurring expenditure of foreign students in AUs

S. N.	Items	Average annual expenditure (Rs.)	% Total expenditure
1	Books, Study material	5762	35.89
2	Miscellaneous	4017	25.02
3	Insurance	3656	22.77
4	Health	1561	9.72
5	Sports	1061	6.61
	Total Avg.	16056	100

7.2.4. Foreign students preferences of countries and AUs

7.2.4.1. Reasons for applying in India

Foreign students were asked to quote reasons for applying in India for education and those reasons were listed and clustered. Majority of the foreign students were recommended by their own country (30%) to opt for India, Indian education quality was the major reason to attract 17 percent of the foreign students, Memorandum of Understanding between their country and India made 17 percent of the students to apply in India. Availability of scholarship (13%), easy admission facilities in India (13%) and geographical advantage of India over other countries like diverse climate which helps to study its interaction on different crops cultivation in India, similar climatic, cultural and food habit and advanced technology adopted which is more relevant to learn from for a foreign student has been quoted as major reasons for applying to AUs (Table 7.18).

Table 7.18: Reasons for applying in India as quoted by foreign students

S.N.	Reasons	No. of students	%
1	Recommendation / sponsorship by own country	9	30.00
2	Good quality of education	5	16.67
3	MOU between organizations	5	16.67
4	Scholarship availability	4	13.33
5	Easy admission	4	13.33
6	Geographical advantage	3	10.00
	Total	30	100.00

7.2.4.2. Reasons for opting particular AU

Foreign students were asked for reasons for opting particular AU in which they are presently studying and majority of them (42%) opined that they were directly allotted

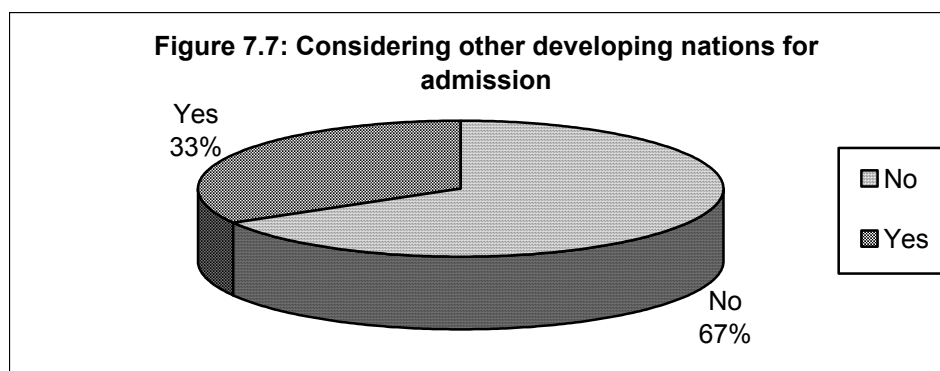
to those universities by ICAR (Table 7.19), rest of the students were allotted through embassy, few were through recommendation by sponsoring country and for some it's the popularity of the university which has made them to select that particular AU (19% each).

Table 7.19: Reasons for opting the particular AU as quoted by foreign students

S. N.	Reasons	No. of students	%
1	Decision of ICAR	11	42.31
2	Decision of Embassy	5	19.23
3	Recommendation by sponsoring country	5	19.23
4	Popularity of the university	5	19.23
	Total	26	100

7.2.4.3. Consideration of other developing nations for admission

Most of the foreign students studying in India did not consider other developing nations for admission and only 33 percent of them considered for other developing countries also before applying to India (Figure 7.7).



China was considered most for the education by majority of the foreign students who opted other countries other than India, followed by Australia, Korea, Cyprus, Sweden, Demark and Malaysia (Table 7.20)

Table 7.20: Countries considered for admission by foreign students other than India

S. N.	Country	No. of students	%
1	China	3	30
2	Australia*	2	20
3	Korea	1	10
4	Cyprus	1	10
5	Sweden	1	10
6	Denmark	1	10
7	Malaysia	1	10
	Total	10	100

* Australia is not developing nation but they had considered this also

7.2.4.4. Reasons for not opting developed nations

Out of the 33 respondents only 18 have quoted some or other reasons for not opting developed nations (Table 7.21). About 67 percent of them have clearly mentioned that there was no chance or opportunity to opt for developed nations, because they have come through the official arrangements such as scholarship from ICAR, ICCR, Common wealth or government sponsorship, whereas 28 percent of respondents did not get scholarship to pursue their education in developed nations as well they felt high tuition fees and high cost of living were major reasons. Only one foreign student had strong personal interest in opting for India in place of developed nations.

Table 7.21: Reasons for not opting developed nations

S. N.	Response	No. of students	%
1	No chance / opportunity to opt for developed nations	9	50.00
2	No Scholarship facility/ Money Factor	5	27.78
3	Government Decision	3	16.67
4	Personal Interest	1	5.56
	Total	18	100

7.2.5 Administrations and infrastructure issues

7.2.5.1. Admission Procedure:

Procedure for admission of foreign students into AUs was analyzed and found that majority of them got admission through ICAR (32%). Other means of admission was through Indian embassy in collaboration with foreign countries embassy, by link programme between ICAR and CARP, through ICCR, self-admission and through government sponsor (Table 7.22).

Table 7.22: Admission procedure followed by foreign students

S. N.	Admission procedure	No. of students	%
1	Through ICAR	8	32
2	Through Indian Embassy in collaboration with other countries	7	28
3	Link programme between ICAR and CARP, Srilanka	5	20
4	Self admission	2	8
5	Through ICCR	2	8
6	Government Sponsor	1	4
	Total	25	100

7.2.5.2 Access to Internet facility

Access to Internet is the most crucial infrastructure facility; out of the total 25 respondents (76 %) have access to Internet facilities either in university or somewhere else, 11 of these (33%) have access to Internet in their university premises only. About 24 percent of the respondents do not have access to Internet at all. All of them felt great need of the Internet facilities at university premises for fast communication as well for education purpose.

7.2.5.3. Rating of Infrastructure facilities

Foreign students were asked to rate infrastructure facilities such as accommodation, food, library, Internet, laboratory facilities as well teaching and education qualities of AUs in which they are studying. They were asked to rate the facilities as not satisfactory, satisfactory, good and very good. Most of them rated accommodation as satisfactory, food as not satisfactory, library and laboratory facilities as good, teaching and education quality as very good (Table A.7.3).

7.2.6. Suggestions by foreign students for improving the quality of education in India

Suggestions for improving the quality of education were collected from foreign students, so that strategies can be worked out to implement those suggestions. Maximum of the suggestions (50%) were for enhancing educational standards to international quality followed by improvement of teaching skills (21%), reduction in administration and bureaucratic hassles, developing infrastructure facilities to international standards and strengthening student support as given in table 7.23.

Table 7.23: Foreign students' suggestions to improve the quality of education

S.N.	Suggestions	Response	%
1	Enhancing educational standards to international quality	19	50.00
2	Improving Teaching Skills	8	21.05
3	Reduction in administration & bureaucratic hassles	4	10.53
4	Developing Infrastructure facilities to international standard	4	10.53
5	Strengthening student support	3	7.89
	Total	38	100

7.3. India as importer of higher agricultural education

7.3.1. Preferred arrangements of facilitating abroad studies of Indian students

Faculty members of AUs were asked to prioritize preferred system of sending Indian agricultural students abroad for studies (Table 7.24), for which they felt that ICAR providing scholarship to talented students as the first priority followed by students going under twining degree program of Indian and foreign universities (part in India and part in abroad) and banks/ financial institutions providing easy interest education loan to talented students. Least preferred option is students going abroad at their own expenses. Other systems of sending students abroad are listed in box 7.3.

Table 7.24: Preferred arrangements of facilitating abroad studies of Indian students

Option	Responses for Priority					Weighted Score*	Rank
	1	2	3	4	5		
Let the students go at their own expenses	60	34	108	955	21	2691	4
Banks/ Financial Institutions must provide easy interest education loan to talented students	198	385	588	45	1	4385	3
ICAR must provide scholarship to talented students	658	377	120	59	4	5280	1
Talented students should go under twining degree program of Indian and foreign universities (part in India and part in abroad)	352	417	346	107	3	4683	2
Other systems of sending students abroad	15	6	10	19	57	224	5

* Σ Priority 1x5+ Priority 2x4+ Priority 3x3+Priority 4x2+Priority 5x1

Box 7.3: Innovative suggestions to facilitate abroad studies of Indian students

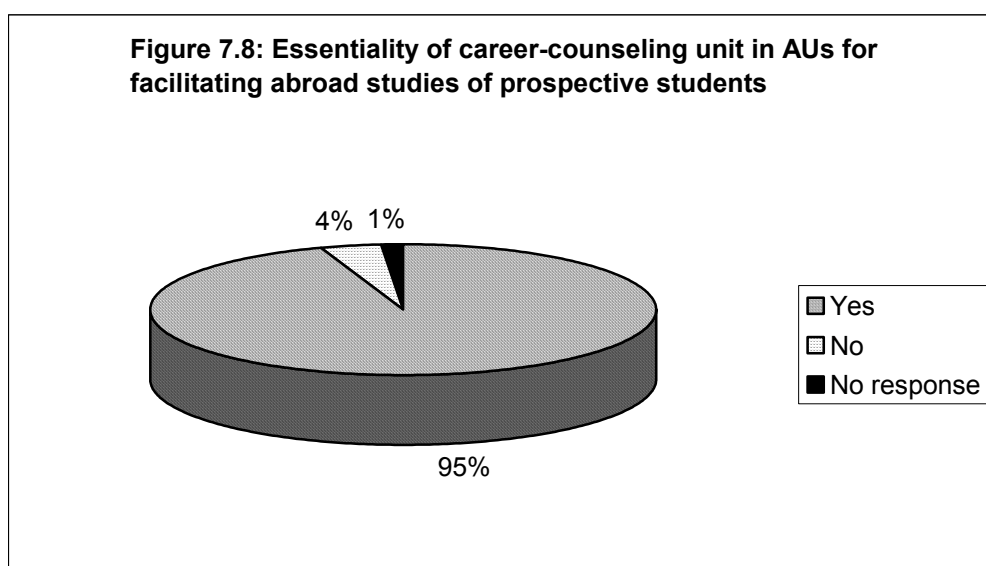
- ❖ Foreign University should provide scholarship for interested and talented students.
- ❖ Subsidized education loan from banks.
- ❖ GOI must provide scholarship with agreement to serve the country for at least 3-5 years.
- ❖ The university should explore courses abroad and willing incumbents should be permitted to abroad at own cost.
- ❖ A foreign study cell must be constituted at university level. This cell should collect information about the various foreign and Indian fellowships available and accordingly should inform the students.

7.3.2. Collaborative arrangement (joint venture, twining program etc) of AUs college/division for sending students abroad

Out of 406 HoDs, majority (92%) opined that there is no collaborative arrangement (joint venture, twining program etc) in their college/ division for sending students abroad for study to pursue their course.

7.3.3. Career counseling / placement unit in AUs for Indian students willing to go abroad for study

For any university, career counseling units and placement units are the most important component in order to provide proper guidance and vision to the outgoing students. These units' acts as a link between the academic set up and outside world. Out of the total 22 responded AUs, 17 universities (77 %) do not have career-counseling units, though 95 percent of the faculty members of the AUs opined that these units is a must for supporting prospective students willing to go abroad for further study (Figure 7.8). With respect to placement units only 9 (41%) out of 22 studied AUs have them.



7.3.4. Major disciplines preferred by Indian students for studying abroad

Faculty members of AUs were asked to list three major disciplines in various faculties in which generally Indian students are going abroad for further studies (Table 7.25). Biotechnology, Plant breeding and Microbiology were the three subjects in Crop science division, Agricultural structures and process engineering, Soil and water conservation Engineering, Farm power and machinery in Agricultural engineering and technology, Agricultural economics, Agriculture extension, Agribusiness in Social sciences, Food and Nutrition, Home management/ Family Resource Management, Child development in Agriculture education (HRD), Horticulture, Post harvest technology, Floriculture in Horticulture division, Veterinary microbiology, Bacteriology, Virology and

Table 7.25: Top three disciplines in various faculties in which generally students are going abroad

Discipline	% of responses
Crop Science	
Biotechnology	26.17
Plant Breeding	23.60
Microbiology	8.52
Agricultural Engineering and Technology	
Agricultural Structures and Process Engineering	42.43
Soil and Water Conservation Engineering	16.76
Farm Power and Machinery	14.32
Social Sciences	
Agricultural Economics	33.33
Agriculture Extension	15.38
Agribusiness*	12.18
Agriculture Education (HRD)	
Food and Nutrition	69.41
Home Management/ Family Resource Management	15.88
Child Development	5.88
Horticulture	
Horticulture	73.23
Post Harvest Technology	13.39
Floriculture	6.30
Animal Science	
Veterinary Microbiology, Bacteriology, Virology and Immunology	16.70
Animal Science	10.92
Veterinary Medicine	8.14
Natural Resources Management	
Agronomy	52.90
Soil Science	22.26
Soil Sciences- Soil Physics /Soil and Water Conservation	6.45
Fisheries	
Aquaculture	24.07
Fishery Sciences/ Fish Environmental Science / Fish IT/FL	18.52
Fish Genetics and biotechnology	14.81
Non Agricultural sciences	
Basic Sciences	42.67
Medical Science	17.33
Remote Sensing	14.67

*Management studies are preferred over agribusiness (22% responses)

Immunology, Animal science, Veterinary medicine in Animal science, Agronomy, Soil science, Soil Physics /Soil and Water Conservation in Natural Resources Management, Aquaculture, Fishery sciences/ Fish Environmental science / Fish IT/FL, Fish genetics and biotechnology in Fisheries, Basic sciences, Medical science, Remote sensing in non-agricultural sciences. Exhaustive list of preferred subjects is given in Annex 7.2. Non conventional and emerging disciplines not available in AUs but preferred by students for study abroad are given in box 7.4⁴.

Box 7.4: Non conventional and emerging disciplines not available in AUs but preferred by students for study abroad

- Fashion technology
- Remote Sensing
- Bio informatics
- Quality control and Quality assurance
- Wild life
- Sustainable Agriculture/ Natural Resource management
- Dairy economics
- Fish Breeding and Hatchery management

7.4. Marketing and advertising by foreign universities to attract Indian students

It is a common assumption that Northern universities put much effort into attracting Indian students into their countries. Thus India is a major supplier of the students, mostly to the developed nations. To verify this, an analysis of education advertisements placed by foreign universities was done with reference to a leading

Table 7.26: The organizations involved and pattern of advertisements to attract Indian students to foreign universities

Advertising organization	No. of advertisements	% of advertisement
Indian private consultancy firms	236	50.43
Indian private institutes jointly with foreign universities	84	17.95
Foreign universities	57	12.18
Indian private consultancy firms with official representatives of foreign universities	47	10.04
Foreign event managers of exhibitions and seminars	36	7.69
Indian event managers of exhibitions and seminars jointly with foreign universities	8	1.71
Total	468	100

⁴ Earlier studies conducted at NAARM has also suggested new courses [Rama Rao, D., S.K. Nanda and C. Sriram (2004), page 39].

national newspaper “The Hindu”. In this newspaper during January to May 2006, there were 468 advertisements concerning foreign universities; on an average 3.12 advertisements per day placed by universities of different countries, mostly through Indian consultancy firms or together with official representatives of foreign universities. Sometimes foreign universities also advertise directly or together with Indian private institutions inviting Indian students to exhibitions and seminars (Table 7.26). The analysis of advertisements shows that the majority of the advertisements are just for information. Others are for either on-the-spot admissions or personal meetings and discussions (Table 7.27).

Table 7.27: Analysis of purpose of advertisements to attract Indian students to foreign universities

Purpose of advertisement	No. of advertisement	% of advertisements
Information	343	73.29
Spot admission	68	14.53
Meeting and discussion	57	12.18
Total	468	100

It is interesting to note that most of the advertisements (65%) pertain to the universities of developed nations like UK, USA, Australia, Germany and Canada (Table 7.28). Most of the universities tried to attract the students in the disciplines of business administrations (31%), engineering and computers (40%) but agriculture and related disciplines are also gaining momentum as around 20 percent advertisement belong to this category (Table 7.29). The websites of overseas universities are another medium of advertising to attract foreign students.

Table 7.28: Analysis of advertisements with respect to affiliation of the foreign universities to various countries

Country of affiliation	No. of advertisements	% of advertisements
UK	123	20.30
USA	111	18.32
Australia	60	9.90
Germany	52	8.58
Canada	43	7.10
Other countries	217	35.81
Total number of advertisements displaying various countries	606	100

Table 7.29: Analysis of advertisements with respect to different disciplines of study

Disciplines of study	No. of advertisements	% Of advertisements
Business Administration	213	30.56
Computers/ Mathematics	145	20.80
Agriculture and related biological sciences	139	19.94
Engineering	128	18.36
Law	47	6.74
Medicine	25	3.59
Total number of advertisements displaying various subjects	697	100

Chapter

8



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Chapter 8

Implications in Mode 3: Commercial presence

8.1. India as exporter of higher agricultural education

8.1.1 Methods of establishing commercial presence of AUs abroad

Nodal officers of all 22 AUs revealed that their universities are not having commercial presence in other foreign countries. But for the commercial presence most of the faculty members of AUs believe that joint degree program between their university and a foreign university at its campus abroad must be the top most priority. In this arrangement the faculty members from AUs can go abroad to deliver the part of their courses at the foreign university. The twinning programme was felt as second priority followed by setting up of the campus abroad as the last choice (Table 8.1).

Table 8.1: Preferential arrangements of AUs to establish commercial presence abroad

S. N.	Method of commercial presence	No of respondents for priority			Weighted score*	Rank
		1	2	3		
1	Joint degree program between AU and a foreign university at its campus abroad, where faculty from AU go abroad to deliver part of their courses	585	508	97	2868	1
2	A twinning program between AU and a foreign university at its campus abroad, and students come to AU for partial fulfillment of degree	551	542	101	2838	2
3	AUs set up a campus abroad	112	104	921	1465	3

* Σ Priority 1x3+ Priority 2x2+ Priority 3x1

8.1.2. Efforts of AUs for establishing commercial presence abroad

It is interesting to note that out of 22 studied universities, 19 universities (86%) have never done any efforts for providing education abroad or registering commercial presence in other countries. Among AUs, only PAU (Ludhiana) and ANGRAU (Hyderabad) has done some efforts in this direction. Aligarh Muslim University (AMU)

Table 8.2: Efforts of AUs for establishing commercial presence abroad

S. N.	Efforts of AUs	No. of Universities	%	University
1	No efforts done	19	86.36	
2	Appointing official representatives	1	4.55	AMU
3	Collaborative arrangements for pursuing degree course in India and a foreign country	2	9.09	ANGRAU, PAU
	Total	22	100	

has done special effort by appointing official representatives for establishment of commercial presence abroad (Table 8.2).

8.1.3. Preferences of kind of nations by AUs to establish commercial presence abroad

As majority of the AUs have not done any efforts to register its commercial presence abroad, as an initiative approach of thought, faculty members of AUs were asked to prioritize their preference of nations for commercial presence abroad. Most of them gave first preference to developing nations as they felt there is lot of scope for Indian AUs and its education system in developing countries when compared to developed countries (Table 8.3). As well AUs will have to face cutthroat competition from more sophisticated universities, high cost of establishment and maintenance in developed nations.

Table 8.3: Prioritization of nations by AUs to register its commercial presence

Countries	No of respondents for priority		Weighted score*	Rank
	1	2		
Developing nations	795	418	2008	1
Developed nations	440	737	1617	2

* Σ Priority1 X 2+Priority2 X 1

8.1.4. Preferences of countries by AUs for a joint degree programme

Faculty members of AUs were asked to suggest three countries in the order of priority, which have high potential and probability of success, if their AU plans to initiate a joint program (UG/PG/PhD). Total 72 countries listed by faculty were grouped into

Table 8.4: Prioritized list of global geographical groups in which the country preferred by AUs for a joint degree programme is located

S.N.	Global geographical groups	No. of Countries	Number of Responses			Weighted Score*
			Priority1	Priority 2	Priority 3	
1	High-income OECD Countries	16	676	686	622	4022
2	Developing Nations of South Asia	10	135	132	127	796
3	Developing Nations of Sub Saharan Africa	13	127	98	72	649
4	Developing Nations of East Asia and Pacific	10	99	96	108	597
5	High-income Non-OECD Countries	8	63	49	47	355
6	Developing Nations of Middle East and North Africa	8	21	35	25	158
7	Developing Nations of Latin America and the Caribbean	5	10	14	22	80
8	Developing Nations of Europe and Central Asia	2	5	10	25	60

* Σ Priority1 X 3+Priority2 X 2+ Priority3 X 1

global geographical groups (Table A.8.1) based on the World Bank classification¹ and their priorities were worked out. The prioritized list of global geographical groups for a joint degree programme with AUs /satellite campus abroad is given in table 8.4. High-income OECD Countries topped the priority followed by developing nations of South Asia and developing nations of Sub Saharan Africa. USA, UK, Australia, Canada, China, Nepal, Any African country, Japan, Sri Lanka, Ethiopia, Israel and many more were the prioritized most preferred countries for a joint degree programme with AUs/satellite campus abroad (Table 8.5).

Table 8.5: Top ten countries as preferred by AUs for a joint degree programme

S.N.	Countries	Global geographical groups	Priority 1	Priority 2	Priority 3	Score*
1.	USA	High-income OECD Countries	436	118	75	1619
2.	UK	High-income OECD Countries	69	229	101	766
3.	Australia	High-income OECD Countries	70	133	185	661
4.	Canada	High-income OECD Countries	35	77	76	335
5.	China	Developing Nations of East Asia and Pacific	51	38	40	269
6.	Nepal	Developing Nations of South Asia	56	24	22	238
7.	Any African country	Developing Nations of Sub Saharan Africa	45	33	25	226
8.	Japan	High-income OECD Countries	22	49	56	220
9.	Sri Lanka	Developing Nations of South Asia	31	29	34	185
10.	Ethiopia#	Developing Nations of Sub Saharan Africa	35	25	13	168

* Σ Priority1 X 3+Priority2 X 2+ Priority3 X 1

Israel (High-income Non-OECD Country) was almost equal to Ethiopia with the score of 167

8.1.5. Foreign universities/institutions for collaboration for joint degree program or twinning program

As the prioritized global geographical groups and countries were known, it's the turn to know preferred foreign universities/institutions for collaboration for joint degree program or twinning program from the HoDs of AUs in their disciplines. The Countries of foreign universities were again grouped into global geographical groups based on the World Bank classification and their priorities were worked out (Table A. 8.2). The list of 253 foreign universities with total frequency of 1392 is given in Annex 8.1. Universities of high-income OECD countries is most preferred global group for AUs to have

¹ World Bank list of economies (April 2006) available at www.nature.com/isn/society/programs/pdf/isn_051027_4x6.xls

collaboration for joint degree program or twinning program followed by that of developing nations of East Asia and Pacific, developing nations of Sub Saharan Africa (Table 8.6).

Table 8.6: Prioritized list of global geographical groups of location of foreign university as preferred by AUs for a joint degree programme / twinning program

S. N.	Global geographical groups	Frequency	%
1	High-income OECD Countries	1157	83.12
2	Developing Nations of East Asia and Pacific	122	8.76
3	Developing Nations of Sub Saharan Africa	30	2.16
4	Developing Nations of South Asia	28	2.01
5	High-income Non-OECD Countries	26	1.87
6	Developing Nations of Latin America and the Caribbean	13	0.93
7	Developing Nations of Middle East and North Africa	8	0.57
8	Developing Nations of Europe and Central Asia	8	0.57
	Total number of universities listed	1392	100

USA, UK, Australia, Canada, Netherlands, Philippines, Thailand, China, Japan and Germany are top ten countries of preferred foreign universities for a joint degree or twinning programme with AUs (Table 8.7).

Table 8.7: Top ten countries of preferred foreign universities for a joint degree / twinning programme

S. N.	Country	Global geographical groups	Total number of universities listed	
			Frequency	%
1	USA	High-income OECD Countries	695	49.93
2	UK	High-income OECD Countries	200	14.37
3	Australia	High-income OECD Countries	66	4.74
4	Canada	High-income OECD Countries	66	4.74
5	Netherlands	High-income OECD Countries	43	3.09
6	Philippines	Developing Nations of East Asia and Pacific	41	2.95
7	Thailand	Developing Nations of East Asia and Pacific	40	2.87
8	China	Developing Nations of East Asia and Pacific	23	1.65
9	Japan	High-income OECD Countries	23	1.65
10	Germany	High-income OECD Countries	19	1.36

8.1.6. Role of Alumni/NRI/PIO/ Professors abroad for commercial establishment of AU abroad

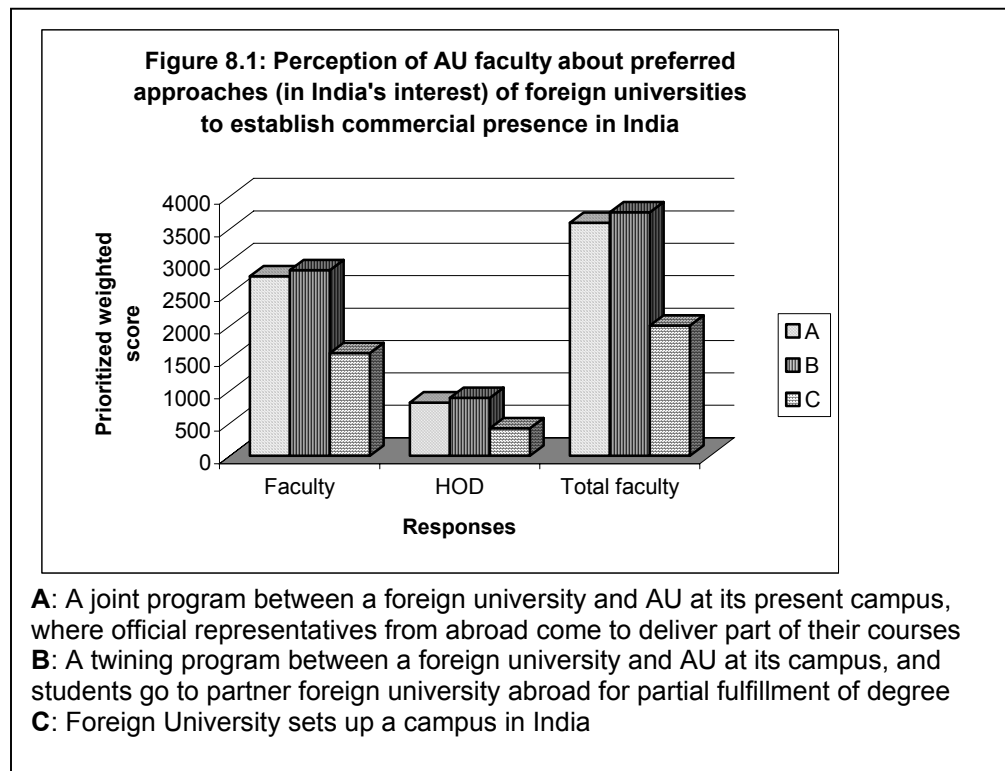
The university alumni, NRIs, PIOs and foreign acquaintances are important sources to help in materializing the collaborative arrangements. In development of strategic alliances of Australian universities, the role of alumni has been taken very

seriously². Therefore the HoDs of AUs were asked to suggest few names of alumni/NRI/PIO/ Professors abroad, who can help in commercial establishment of AU abroad. They have suggested large number of names (436). The List of these persons is given in Annex 8.2.

8.2. India as importer of higher agricultural education

8.2.1. India's interests and approaches of foreign universities to establish commercial presence in the country

If foreign universities would be willing to establish commercial presence in India, what strategies these universities would adopt? Will these be in the interest of our country? To analyze their approaches, and to develop the recommendation for the



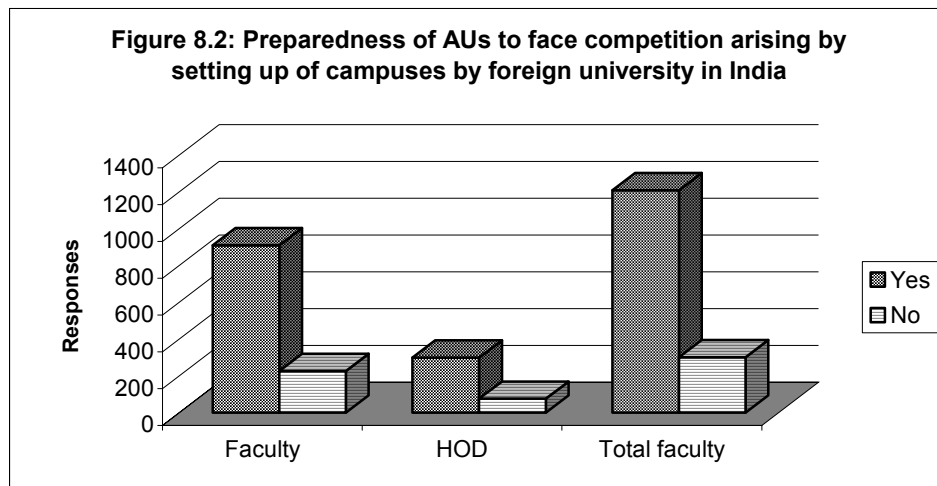
appropriate policy measures, HoDs and faculty members of AUs were asked to prioritize best approach from the Indian interests point of view. The opinion given by HoDs and faculty members is the same; therefore validity of data is of high significance. As presented in figure 8.1, majority of them felt that twining program between a foreign

² Bannerman Paul and Joan Spiller (2005) on page 61 make the comment about role of alumni in strategic alliances in Australian higher education.

university and AU at its campus and students going to partner foreign university abroad for partial fulfillment of degree as best option followed by joint program between a foreign university and AU at its present campus where official representatives from abroad come to deliver part of their courses. The foreign universities would give least priority for setting up their campuses in India³. The detailed analysis of prioritized preferences of foreign universities is given in table A.8.3.

8.2.2. Preparedness of AUs to face international competition arising by setting up of campuses by foreign universities in India

Both faculty and HoDs of AUs asked whether their college/university ready to face international competition arising by setting up of campuses by foreign universities in India, for which almost 80 percent of the respondents opined they are ready for it (Figure 8.2). Rest 20 percent of the respondents who said that their AUs are not ready for the competition were asked to list down the reasons for it (Table 8.8). Reasons quoted by them are as follows lack of Infrastructure, funds inadequacy, shortage of manpower, lack of quality manpower, lack of training and expertise, bureaucratic constraints and administrative bottlenecks, deteriorating education quality, constraints in motivation/leadership/initiatives, non conducive policies of government and universities, socio cultural inhibitions, loosing employment opportunities, high competition from rest of the world and competition within country as there are sufficient number of universities are available in India itself.



³ Bannerman Paul and Joan Spiller (2005) on page 42 comment that off shore program are the least priority in strategic alliances in Australian higher education.

Table 8.8: Issues of unprepared ness to face international competition arising by setting up of campuses by foreign universities in India

S. N.	Issues of unprepared ness to face competition	Responses	%
1	Lack of Infrastructure	191	35.70
2	Funds inadequacy	58	10.84
3	Shortage of manpower	53	9.91
4	Lack of quality manpower	44	8.22
5	Lack of training and expertise	37	6.92
6	Bureaucratic constraints and administrative bottlenecks	34	6.36
7	Deteriorating education quality	29	5.42
8	Constraints in motivation/leadership/Initiatives	26	4.86
9	Non conducive policies of Government and Universities	24	4.49
10	High competition from rest of the world	22	4.11
11	Socio cultural inhibitions	7	1.31
12	Loosing employment opportunities	7	1.31
13	Competition within country	3	0.56
	Total	535	100

8.2.4. Request/proposal from abroad to setup campus in India with AUs collaboration

HoDs of AUs were enquired whether their college/division received any request or proposal from abroad to setup campus in India with their collaboration, for which only 180 HoDs responded, among them also very few (6%) said that they have got proposal from abroad to setup campus in India with Indian agriculture colleges/division's collaboration.

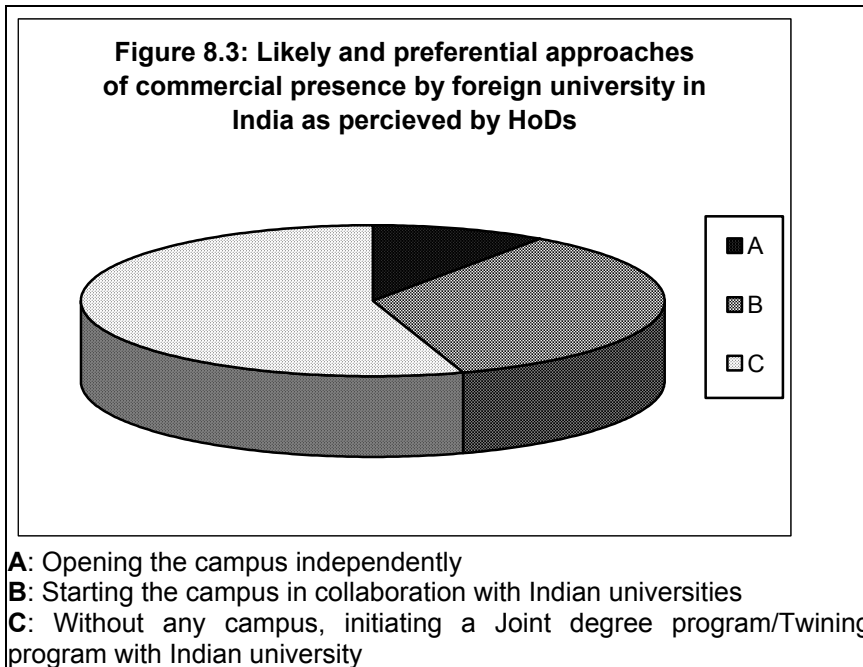
8.2.5. Preference to the type of foreign universities for establishing campus in India

Faculty staff of AUs were asked to select between private universities, public universities or combination of both type of universities for establishing campus by foreign university in India, for which 53 percent of the total respondents (1253) believe that either private or public may be allowed, while rest of the respondents (47 %) favor entry to only public universities

8.2.6. Opinion of HoDs about likely approach of foreign universities while establishing the commercial presence in India

The approach of foreign universities to establish commercial presence in India is not known to us. A question in this regard was thrown to policy makers (HoDs) asking about their opinion on the preferred approaches of these foreign universities to establish

themselves commercially in India. The HoDs feel that initiating a joint degree program/twinning program with Indian university (55%) may be the most preferred approach of the foreign universities. The second preferred approach may be starting the campus in collaboration with AUs (35%), and the least preference would be opening the campus independently (Figure 8.3)⁴.



⁴ Please refer Australian alliance strategy document by Bannerman Paul and Joan Spiller (2005)

Chapter

9



**Implications in Mode-4:
Movement of Natural
persons**

Chapter 9

Implications in Mode 4: Movement of Natural persons

9.1. India as exporter of higher agricultural education

9.1.1. Foreign experiences of faculty members of AUs

Faculty members and HoDs of AUs were probed about their experiences in other countries. Almost 66 percent of faculty members and 41 percent of HODs had no foreign experience. And those who had been abroad had mainly gone for training, seminars, conferences and postdoctoral research. Very few have gone abroad for teaching assignments (Table 9.1).

Table 9.1: Foreign experience of faculty members of AUs

Sl. No.	Purpose of foreign visit	Faculty		HOD		Total	
		N	%	N	%	N	%
1	No	894	65.93	192	41.29	1086	59.64
2	Training	184	13.57	109	23.44	293	16.09
3	Seminars, Conferences	141	10.4	83	17.85	224	12.30
4	Post Doctoral Research	65	4.79	40	8.6	105	5.77
5	PhD	31	2.29	13	2.8	44	2.42
6	Teaching	24	1.77	19	4.09	43	2.36
7	Post Graduation	17	1.25	9	1.94	26	1.43
	Total	1356	100	465	100	1821	100

9.1.2. Invitation by foreign institution to the faculty members of AUs

Faculty members and HoDs (1653 in number) of AUs were asked whether they were invited by any foreign institution for providing education service in India or abroad in their collaborative institutions for which almost 91 percent of them said no (Table 9.2). It can be thus said that the foreign experience of the faculty members of the AUs is not of the international standard.

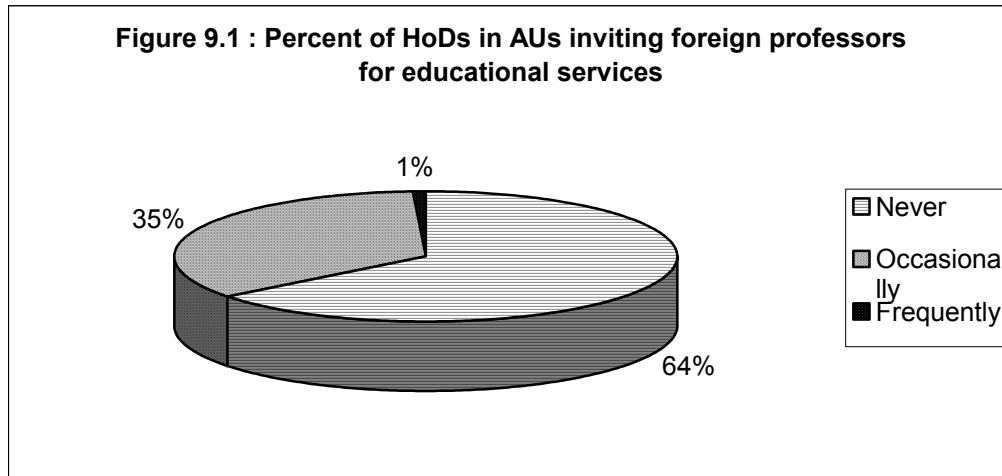
Table 9.2: Invitation by foreign institution to the faculty members of AUs to provide educational services in their country

Response	Faculty		HOD		Total	
	N	%	N	%	N	%
Yes	101	8.04	52	13.1	153	9.26
No	1155	91.96	345	86.9	1500	90.74
Total	1256	100	397	100	1653	100

9.2. India as importer of higher agricultural education

9.2.1.1. Invitation to foreign professors for educational services in Indian AUs

Most of the HoDs (64%) have never invited professors from abroad for providing educational service in their college/department, only 35 percent of them have invited occasionally, only 1% of HoDs invite foreign professors frequently (Figure 9.1).



In other set of question, the faculty members were asked to provide their opinion about invitation to the professors from abroad to deliver educational services in their colleges. Eighty three percent of the total 1253 faculty members said yes. They feel that the professors from abroad must be invited to deliver educational services in Indian institutions.

Chapter

10



**Brainstorming
outcome:
Management of
strategic alliances**



Chapter 10

Brainstorming outcome: Management of strategic alliances

10.1. Idea generation during brainstorming workshops

As discussed in chapter 3, the brainstorming workshops were conducted at eight selected AUs. The purpose of these one-day workshops was to collect the opinion of the faculty members on the ten strategic issues as listed in box 10.1; these issues pertain to priority setting, strategic policy analysis and SWOT analysis. In total 290 faculty members participated, the enthusiasm of the faculty members can be seen by the fact that more than 7000 ideas were generated, on an average each faculty members contributed more than 24 ideas for the ten issues (Table 10.1). For the details of the university wise and issue wise complete information on idea generation, please refer table A.10.1.

Box 10.1: Ten strategic issues discussed during brainstorming workshops

A. Priority setting:

1. Prioritized options of modes of service delivery in favor of Indian higher agricultural education (Mode-1: Cross border supply, Mode-2: Consumption abroad, Mode-3: Commercial presence)
2. Prioritized list of five top agricultural subjects where arrival of foreign students is most expected.
3. Prioritized list of country wise expected arrival of foreign students (developed nations, developing nations of Asia, developing nations of Africa, developing nations of Latin America)

B. Strategic Analysis:

4. Effective strategies for attracting foreign students in agricultural universities in India
5. Effective strategies for establishment of commercial presence of Indian agricultural universities abroad
6. Preparedness and regulatory requirements to face entry of foreign universities

C. SWOT analysis for establishing India as an exporter of agricultural education service: Foreign students come to India; Indian universities set up branch campus abroad; Indian professors move abroad for service delivery.

7. Strengths
8. Weaknesses
9. Opportunities
10. Threats

The expression of ideas is directly correlated with the understanding of the subject. The analysis of the generated ideas clearly reveals that the faculty members of AUs have extremely high understanding of implications of some issues with respect to GATS, while moderate understanding of others, and fairly well of the some strategic issues. The facts presented in figure 10.1 opine various categories of understanding level as given below:

1. Issues of extremely high understanding: Prioritized list of five top agricultural subjects where arrival of foreign students is most expected; effective strategies for attracting foreign students in agricultural universities in India; prioritized list of country wise expected arrival of foreign students.
2. Issues of moderate understanding: Strengths and weaknesses of AUs for establishing India as an exporter of agricultural education service; preparedness and regulatory requirements to face entry of foreign universities.
3. Issues of moderate understanding: Opportunities for AUs for establishing India as an exporter of agricultural education service; priority of modes of service delivery in favor of Indian higher agricultural education; effective strategies for establishment of commercial presence of Indian agricultural universities abroad; threats for AUs for establishing India as an exporter of agricultural education service.

It can be thus said that faculty members would be capable of addressing those strategic issues, where they have extremely high and moderate understanding of the implications with respect to GATS. But for the last category, the AUs may take the help of other experts or consultants to equip themselves to face the challenges concerning GATS and internationalization of the educational services.

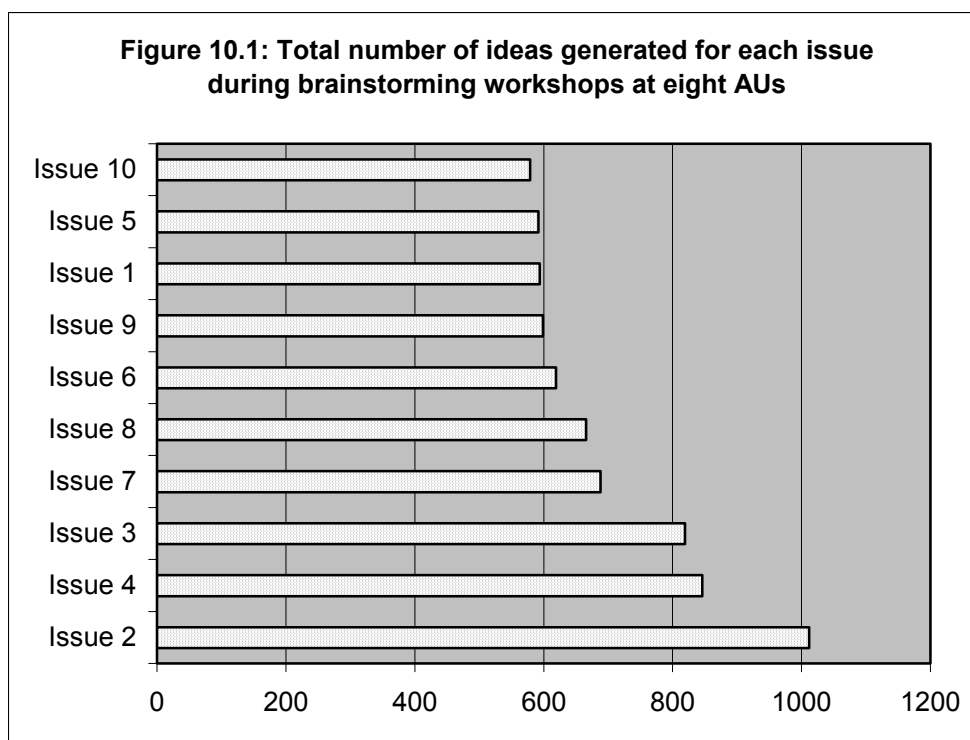


Table 10.1: Ideas generated at various AUs

University	Ideas		Persons
	Total	Average	
ANGRAU	718	31.22	23
UPPDVU	548	18.27	30
CSK-HPKV	685	14.89	46
NDRI	946	28.67	33
CIFE	946	28.67	33
KVAFSU	1336	24.74	54
OUAT	945	27.00	35
KAU	890	24.72	36
Total	7014	24.19	290

During brainstorming workshop sessions, the participants studied the ideas, and clustered them into major themes to prepare the group reports. The group reports for the issue number 4 to 6 of all the eight AUs are presented in Annex 10.1. The project team made a detailed studied of the ideas and reports so generated. The ideas with respect to several strategic issues were clustered and categorized into various themes, and each theme was further clustered and categorized into several sub-themes. Themes are sometimes known as driving forces and sub-themes as driving elements. As given in box 10.1, for the section 'A' i.e. priority setting, no themes were identified as these were the direct questions; for section 'B' i.e. strategic analysis and section 'C' i.e. SWOT analysis, the ideas were clustered as discussed. The brainstorming outcome in the form of

themes and sub-themes on priority setting and strategic analysis would be discussed in the following paragraphs, while for SWOT, the next chapter is devoted. The complete list of themes and sub-themes identified for strategic analysis are presented in Annex 10.2.

10.2. Analysis of prioritized options

For any strategic alliance to be materialized, the first and foremost requirement is setting the priorities as per the available choices under GATS framework. These priorities mostly relate to mode of service delivery, attracting foreign students, and developing suitable alliances for this purpose.

10.2.1. Prioritizing the mode of service delivery

Article 1 of GATS defines four modes of supply in any service sector trade. The four modes are defined according to the location of the provider and the recipient of the service. Participants were asked to prioritize that which mode of service supply is in favor of Indian higher agricultural education? These modes are Mode-1: cross border supply, Mode-2: consumption abroad, and Mode-3: commercial presence, the Mode-4 has various policy intricacies; therefore it was kept out of scope for this analysis. The liberalization process of each mode opens up different sets of opportunities and challenges stems from a certain inherent asymmetry in the comparative advantage intrinsic in the education sectors of developed and developing countries. To bring out the final priority, the priorities given by the respondents were given the preferential weight by allotting 3 points to priority 1, 2 points to priority 2 and 1 point to priority 3. As depicted in table 10.2, the Mode-2 must be the most preferred service supply, which will be in favor of AUs of the country, it follows the Mode-3, and Mode-1 must be the last choice.

Table 10.2 Preferences of AUs towards modes of service supply

Mode of service supply	Number of responses in favor of			Weighted Priority*
	Priority 1	Priority 2	Priority 3	
Mode-1: Cross border supply	55	71	63	370
Mode-2: Consumption abroad	82	80	35	441
Mode-3: Commercial presence	76	48	84	408

* Σ Priority 1x3+ Priority 2x2+ Priority 3x1

10.2.2. Prioritized options with respect to subjects

The respondents are in favor of taking the benefit of GATS to attract foreign students in their universities. But the questions is, which subjects may be preferred by

them. Therefore respondents were asked to list five top agricultural subjects in order of their importance, for which the arrival of foreign students is most expected. On responses of the participants, the analysis was done to identify top five subjects (in order of their importance) in each divisions of ICAR that can attract foreign students. These divisions are- Crop Science, Horticulture, Animal Science, Fisheries, Agricultural Engineering & Technology, Natural Resources Management, Social Sciences and Agricultural Education. Biotechnology in crop as well as animal sciences, horticulture (fruit sciences), aquaculture, agri-business management, farm machinery and power, food and nutrition and agronomy are the top most subjects in various divisions that can draw the foreign students. The list of the participants also include new subjects such as sustainable agriculture and natural resources management, fashion technology, and thrust areas for which foreign students are expected to arrive India, these subjects are not presently available in AUs, the topmost subject in this category is bio-informatics. The complete list of subject in order of the importance in each ICAR division is given below. For exhaustive list please see Annex 10.3.

1. Crop Science

1. Biotechnology (Agricultural Science)
2. Plant Breeding
3. Plant Pathology
4. Agricultural Entomology
5. Seed Technology

2. Horticulture

1. Horticulture (Fruit Science)
2. Spices and Plantation crops & Management
3. Horticulture
4. Horticulture (Vegetable Science)
5. Post Harvest Technology

3. Animal Science

1. Biotechnology (Animal Science)
2. Veterinary Microbiology, Veterinary Bacteriology, Veterinary Virology & Immunology
3. Veterinary Medicine

4. Animal Genetics and Breeding
5. Animal Nutrition

4. Fisheries

1. Aquaculture
2. Fish Genetics and Biotechnology
3. Fish Nutrition and Biochemistry
4. Fisheries Resource Management
5. Fish Microbiology/Fish Pathology

5. Agricultural Engineering & Technology

1. Farm Power & Machinery
2. Food Science and Technology
3. Agricultural Structures and Process Engineering
4. Bio energy including renewable Energy sources
5. Soil and Water Conservation Engineering

6. Natural Resources management

1. Agronomy
2. Tea Husbandry
3. Soil and Water Management
4. Sustainable Agriculture/ Natural Resource management
5. Soil Science

7. Social Sciences

1. Agribusiness management
2. Agricultural Economics
3. Veterinary Extension Education
4. Agricultural Extension
5. Dairy Extension

8. Agricultural Education

1. Food and Nutrition
2. Home science

3. Fashion technology
4. Textile and Clothing

9. Others and new subjects

1. Bio informatics
2. Agricultural Biodiversity
3. Organic Farming
4. Aromatic and Medicinal Plants
5. IPR issues in Agriculture

10.2.3. Prioritized options with respect to student sending countries

After prioritizing the mode of service supplies and probably most preferred subjects by the foreign students, the most important priority setting element is to find out the category of nations from where the arrival of foreign students is most expected. The respondents were asked to prioritize the given four options of various categories of nations. The analysis of results as presented in table 10.3 reveals that for attracting foreign students the AU must aim the developing nations of Asia, this category of nations can be the top student sending countries. Next in the preference must be the developing nations of Africa. Developing nations of Latin America and developed nations may not be the good suppliers of the students to AUs in India.

Table 10.3. Most expected group of nations that can send foreign students in AUs

Category of nations	Number of responses in favor of				Weighted Priority*
	Priority 1	Priority 2	Priority 3	Priority 4	
Developed nations	17	14	29	140	308
Developing nations of Asia	113	80	15	6	728
Developing nations of Africa	76	99	20	10	651
Developing nations of Latin America	5	16	141	38	388

* Σ Priority 1x4+ Priority 2x3+ Priority 3x2+Priority 4x1

10.3. Strategic analysis for alliance management

This section covers the analysis of strategic issues related to attracting the foreign students in agricultural universities in India, establishment of commercial presence of Indian agricultural universities abroad and preparedness and regulatory requirements to face entry of foreign universities. The major strategic points of analysis are discussed with a view of establishing India as an exporter of agricultural education service.

10.3.1. Effective strategies for attracting foreign students in agricultural universities in India

During brainstorming workshops related to attracting foreign students, marketing strategy¹ emerged as the major strategic theme or driving force, followed by strategic infrastructure development, education quality and standards, and financial strategy as the major themes in that order of importance (Table 10.4). In the category of marketing strategy, the majority of ideas clustered into sub-themes (driving elements) of publicity through web, media, advertisements abroad and Internet, in order of importance (Table A. 10.2). For the infrastructural strategy the major sub-themes are- development of world class infrastructure with essential facilities and obtaining some sort of certification (Table A.10.3). For education quality standards, 45% of the ideas were for designing special courses and demand-oriented courses, followed by upkeep of international standards through adoption of modern education methodologies and revision and upgrading of courses to make them demand-oriented (Table A.10.4). Strategic linkages and collaboration also emerged as one of the major theme, and main sub-themes under this head are establishing branch campuses and counseling centers abroad, eliciting role of embassies/ consulates for linkages, mutual exchange of students, and several other sub-themes are given in table A.10.5. Within the financial strategy 70 percent of ideas (driving elements) related to the provisions of scholarships, fellowships and assistantships for foreign students, and 17 percent favored keeping the cost of education

Table 10.4: Major themes of strategic policy to attract foreign students in AUs

S.N	Strategic policy: themes	% of ideas
1.	Marketing strategy	32.74
2.	Strategic infrastructure development	16.78
3.	Strategy for education quality & standards	15.25
4.	Strategic linkages & collaborations	11.94
5.	Financial strategy	10.99
6.	HRD strategy	8.51
7.	Strategic policy development	1.42
8.	Student support services	1.18
9.	Administrative & regulatory mechanisms	1.18

¹Develop authenticity in the form of brand that helps both institution and consumer, develop suitable marketing strategy for star program and star faculty, and enhance spending on advertising. Pawan Agrawal (2006) on page 128 reports “According to AdEx India estimates, among various categories, educational institutions were at the number one slot (up from sixth position in 2003) in print media expenditure in 2004 in India. They spent Rs. 2.1 billion in 2004. This worked out to 3.9 per cent of the total print ad spend”

low (Table A.10.6). The sub-themes for other themes like HRD strategy, strategic policy development, and student support services and administrative and regulatory mechanisms are given in tables A.10.7, A.10.8, A.10.9, and A.10.10.

10.3.2. Effective strategies for establishment of commercial presence of AUs abroad

The respondents have categorized various strategic issues for effective establishment of commercial presence of AUs abroad. In their opinion, the most important strategy for doing so is development of strategic linkages and collaboration² with the foreign universities. Unlike attracting foreign students, the marketing strategies have the second most important role in establishment of collaborative linkages for education and research both. Joint educational delivery systems with foreign universities is also perceived as important strategic area, this will be the fall out of strategic linkages and would take a form of collaborative arrangements, it may also lead for setting up branch campuses abroad. The HRD and strategic policy initiatives are essential to achieve the goal of commercial presence abroad. The financial strategy is of less significance for this sector but some strength lies with respect to financial implication. For details please see table 10.5.

Table 10.5: Major themes of strategic policy for establishment of commercial presence of AUs abroad

S.N.	Strategic policy: themes	% of ideas
1	Strategic linkages & collaborations	44.59
2	Marketing strategy	26.52
3	Joint educational delivery systems with foreign universities	9.46
4	HRD strategy	7.26
5	Setting up branch campuses abroad	4.39
6	Strategic policy development	4.05
7	Financial strategy	2.20
8	Strategic competitiveness	1.52

Strong linkages and collaboration is the best method to establish the commercial presence abroad. It can be achieved through MoUs for research, exchange of faculty

² Bannerman Paul and Joan Spiller (2005) on page 43 report the benefits of alliances, topmost is access to higher education, improvement in product quality and enhancement in reputation and credetials. Lack of resources, and cultural differences are the top most problems in alliance initiation and alliance negotiations respectively; reputation attract parteners, local regulatory controls and complimentarity build up strategic alliances (page 50).

and students for joint educational programs, establishment of off shore campuses, role of NRIs, alumni and consulates and embassies is also of paramount significance. Respondents have suggested strengthening ICAR-SAU linkages, and also to initiate joint degree programs with the other universities at home that are situated in different agro-climatic situation. There are several other ways to achieve it as detailed in table A.10.11. The AUs must develop strong market strategy, which can be done through informative websites, publicity through various means, taking up consultancies abroad, hiring consultants abroad and other methods (Table A.10.12). Joint educational delivery systems with foreign universities constitute the third most important pillar. These mostly must be done mainly in the mode of joint degree programs, the second options is twinning programs. Joint degree program means two universities (X, Y) collaborate; the students are enrolled and study in 'X' university, while representatives from collaborative 'Y' university deliver their part of course by visiting the former 'X' university; the degree is awarded jointly. The twinning program means two universities (X, Y) collaborate; the students are enrolled and mainly study in 'X' university; for partial fulfillment of coursework the students visit collaborative 'Y' university; the degree is awarded either jointly or by the former university. Though distance education and contact program would also help in commercial presence but these methods have been given low priority (Table A.10.13).

The efforts for commercial presence will not bear fruits unless HRD measures are taken up at university level on various suggested parameters (Table A.10.14). These measures along-with some other measures may be integrated to develop a suitable policy at university level. The most important element of the strategic policy development is amendment of government rules for facilitating smooth entry of foreign students, the other important element is enhancing credibility of the university and creating cordial and friendly environment. The idea of identification of needy and target countries was given by few people only but it is very important responsibility of AUs (Table A.10.15). The role of financial strategy is very limited for commercial presence but the respondents have given their clear about the cashing on opportunity of low cost of education but fee arrangements must be separate for foreign and home students. The respondents have also suggested various other methods to enhance the commercial presence through financial measures (Table A.10.16).

The faculty members of AUs do not prefer setting up of branch campuses abroad (4.39% of total ideas reflect for this), this strategy is on 5th position. Among those, who gave this idea 65% favor setting up model campuses abroad and 35% favor establishment of franchise abroad? Taking the advantage of strategic competitiveness is not well received but 78% of those who give this idea favor development of competitive courses based on biodiversity or geo-climatic advantages, 22% opine that efforts must be done to provide low cost education.

10.3.3. Preparedness and regulatory requirements to face entry of foreign universities

The ideas given by the respondents for preparedness and regulatory requirements to face entry of foreign universities were analyzed through cluster method (Table 10.6). The results reveal that administrative and regulatory mechanisms were the most important theme to be taken up for preparedness and regulatory requirements to face entry of the foreign universities. The other important themes were strategy for education quality & standards and infrastructure development. Strategic linkages & collaborations, HRD and financial strategy can be given middle level priority. The strategic policy development, student support services, marketing strategy and joint educational delivery systems with foreign universities were the strategic themes of less significance.

Table 10.6: Major themes of strategic policy for preparedness and regulatory requirements to face entry of foreign universities

S.N.	Strategic policy: themes	% of ideas
1.	Administrative & regulatory mechanisms	52.67
2.	Strategy for education quality & standards	21.32
3.	Strategic infrastructure development	7.43
4.	Strategic linkages & collaborations	5.33
5.	HRD strategy	5.33
6.	Financial strategy	4.85
7.	Strategic policy development	1.45
8.	Student support services	0.97
9.	Marketing strategy	0.32
10	Joint educational delivery systems with foreign universities	0.32

For administrative and regulatory mechanisms the most important component is registration, accreditation and regulation at national level. There may be a provision of apex body for these activities including licensing and monitoring, ICAR may formulate

guidelines or regulation can be done through ministry concerned. It is also noted that foreign universities must have recognition and accreditation in their own country. There must be some mechanism of regulation at international level. To facilitate smooth functioning the necessary amendments can be done in regulatory legislative Acts of Govt. of India. Some issue though not raised by many faculty members but these are of high significance such as security of the foreign nationals (Table A.10.17).

Educational quality and standards³ can be the second most effective strategy for facing the entry of foreign universities. Education of international standard with international and national accreditation would be very effective instrument. Harmonization of national and international standards was found another gray area. As discussed earlier the demand oriented, internationally recognized and need based courses and curriculum was found to be another sub-theme. International recognition of the degree is another gray area as per GATS. Many did not raise some of the issues but these are of very high significance e.g. ranking⁴ of the universities and colleges (Table A.10.18). Strategic infrastructure development (Table A.10.19), linkages and collaborations (Table A.10.20), HRD strategies (Table A.10.21), student support services (Table A.10.24) contain mostly the same sub-themes as discussed earlier. Financial strategy also contains the same components but strong emphasis has been given for separate fee structure for foreign and home students (Table A.10.22). For the strategic policy development⁵ two third ideas are for amending the government rules and rest of the ideas are equally divided in favor of simpler currency exchange mechanisms, proper advisory system and easy visa norms for international students (Table A.10.23). Marketing strategy is of less significance and the respondent believe that market survey and networking is also an instrument of preparedness and regulation. Similarly the joint

³ Bannerman Paul and Joan Spiller (2005) on page 48 writes that quality assurance to be enforced and regulated through good governance such as Australian Universities Quality Agency (AUQA) regularly does technical audits; quality assurance is a competitive necessity to build up alliances for global market.

⁴ Formal international ranking of higher education institutions are being attempted by various organizations around the world. Such organizations include the institute of higher education at Shanghai Jiao Tong University (China) [<http://ed.sjtu.edu.cn/ranking.htm>] and the Times Higher Education Supplement (UK) (<http://www.thes.co.uk/worldrankings/>) taken from Pawan Agrawal, 2006 page 64]. The important issues in ranking are ranking by private or public institution, criteria for ranking, ranking of institution or programs and method of ranking; these issues has been discussed by Pawan Agrawal, 2006 on page 111-2. NAARM, Hyderabad has already taken an initiative by taking up AP cess project on ranking of agricultural colleges.

⁵ Bannerman Paul and Joan Spiller (2005) on page 48 writes that in the value chain of education between the alliances the important policy issue is the allocation of decision rights between the partners, it will depend on various factor listed by the authors.

delivery system is of very less significance, the respondents feel that these delivery systems would provide platform for preparedness and once these are in operation, the regulatory mechanisms also would be in place. The respondents are equally divided in favor of joint degree and twinning program.

Chapter

11



**Brainstorming
outcome:
SWOT analysis**

Chapter 11

Brainstorming outcome: SWOT analysis for establishing India as an exporter of agricultural education service

This chapter is devoted for identifying strengths, weaknesses, opportunities and threats (SWOT) for establishing India as an exporter of agricultural education service. The ideas generated contain SWOT elements mainly of Indian NARS and few elements concerning other areas of interest in the country. Participants of the brainstorming were made clear that exporter of education means mainly three situations as given below:

1. Foreign students come to India,
2. Indian universities set up branch campus/ franchise abroad,
3. Indian professors move abroad for service delivery.

As discussed in chapter 3 and chapter 10 during brainstorming workshop sessions, the participants studied the ideas, and clustered them into major themes to prepare the group reports. The group reports for the issue number 7 to 10 that pertains to SWOT of all the eight AUs are presented in Annex 11.1. The project team made a detailed studied of the ideas and reports so generated. The ideas with respect to SWOT were clustered and categorized into various themes, and each theme was further clustered and categorized into several sub-themes. The complete list of themes and sub-themes identified for SWOT analysis is presented in Annex 11.2.

11.1. Strengths of India with respect to export of agricultural education

Diversity in India and available human resources are the biggest strengths of India, other important strengths lies in linkages and collaboration and university education systems; infrastructure and institutional and core matters are other strengths (Table 11.1). Diversity of flora fauna and geo-climatic situations is the biggest strength; the other features of diversity such as culture, food and specific variations are the added strengths that would help in establishment of India as an exporter of agricultural education (Table A.11.1). Human resource is another strength because of available quality teachers, world-class expertise, large number of human resources and other aspects of HRD (Table A.11.2).

Table 11.1: Major themes of strengths of India with respect to export of agriculture education

S.N.	Strengths of India: themes	Percentage of ideas
1.	Diversity in India	30.67
2.	Human resources	27.91
3.	Linkages & collaborations	14.39
4.	University education systems	10.32
5.	Infrastructure	7.12
6.	Economic & financial matters	5.09
7.	Institutional and core issues	4.51

Linkages and collaboration can be strength if little changes are done as detailed in table A.11.3. The university education system in India has certain strengths that can be cashed for becoming exporter of education. English as the medium of instruction, in-built research system in NARS and large network of agricultural universities have been identified as major strengths of university education system; the other kinds of strength among this category are listed in table A.11.4. As explained in table A.11.5, almost 65% of ideas favor that AUs are equipped with good infrastructure and living conditions, but only 33% idea favor that professionally useful facilities such as good labs, farms and libraries are available; the campuses are certainly devoid of good basic amenities. On the front of expenditure towards education, the country has certain advantages such as low cost of education and living (Table A.11.6). For making AUs as exporter of education, the faculty members have identified several institutional and core issues to be addressed through appropriate policy measures. The most important is promoting the niche areas of the AUs abroad and identification of niche areas further. Research and educational aspects on potential traditional commodities and products can help in building up exportable education, more importantly AUs must develop center of excellence, and our political leaders must strengthen democratic relations with outside world to make educational services export a reality (Table A.11.7).

11.2. Weaknesses of India with respect to export of agricultural education

All the strengths pointed by the respondents and discussed in Para 11.1 also have the other side of the coin i.e. weaknesses, these strengths can be effective only when the weaknesses associated with them are removed or reduced significantly. Human resource is the strength of second rank only after diversity available in the country. But human resource is the weakness of top level. Other than the strengths as weakness, the country as a prevailing system has several weaknesses (Table 11.2).

Table 11.2: Major themes of weaknesses of India with respect to export of agriculture education

S. N.	Weaknesses of India: themes	% of ideas
1.	Human resources	24.17
2.	System weaknesses	23.72
3.	Infrastructure	21.32
4.	University education systems	11.86
5.	Economic & financial matters	9.01
6.	Linkages & collaborations	7.51
7.	Diversity in India	1.50
8.	Institutional and core issues	0.90

Human resource though available in plenty but the human resources that can boost the export of educational services is in shortage, the faculty members are not trained, they do not have international exposure, other than that, the personality and motivation factors as discussed in Table A.11.8. After human resources, the largest weakness is the prevailing system in the universities and the country. These weaknesses are the imbibed shortcomings in the systems in the form of political system, administrative system, social system and day-to-day functioning of the AUs, for details please see table A.11.9. Poor infrastructure with less number of professionally useful facilities and basic amenities, poor hygienic conditions, irregular power supply and poor maintenance are some of the weaknesses related to infrastructure (Table A.11.10). For the university education systems the weaknesses are that the courses are not practical (probably society does not need some of the courses) or input is not in consistency with the social needs therefore significant numbers of very good students are not able to get any job. Other weaknesses in the category of university education system are related to standards and accreditation etc are listed in table A.11.11; a concern rose by the faculty members that only mediocre prefer agric. higher education must be looked into seriously. For financial and economic matter, more than 98% ideas make clear that shortage of fund is greatest weakness, less than 2% idea favor that cost of education is high. Table A.11.12 depict various shortcomings related to linkages and collaborations; the major weaknesses in this category are poor interaction between universities, which happened mainly due to less mobility of faculty and less support received from the government. Though diversity is the greatest strength but it can be weakness on two accounts as listed in table A.11.13. For institutional and core issues, the respondents feel that less effectiveness of NARS leading to export of education, absence of center of excellence, and overlooking the identification of niche area can be weaknesses with respect to globalization of agricultural education (Table A.11.14).

11.3. Opportunities for India with respect to export of agricultural education

This section discusses several opportunities¹ for export of education, these opportunities of two kinds, one the opportunities which country has but yet to be cashed, second the GATS would make certain new opportunities available to the country, AUs and faculty members. The largest opportunity would be available for development of linkages and collaboration. Diversity available in the country is the good strength that should be converted as an opportunity; availability of human resource is also an opportunity but opportunity must also be find to develop these resources further; certain other opportunities are available in the sector university education system, institutional and core issues, infrastructure and economic and financial matters (Table 11.3).

Table 11.3: Major themes of opportunities for India with respect to export of agriculture education

S. N.	Opportunities for India: themes	% of ideas
1.	Linkages & collaborations	30.38
2.	Diversity in India	30.05
3.	Human resources	15.36
4.	University education systems	9.52
5.	Institutional and core issues	6.34
6.	Infrastructure	4.17
7.	Economic & Financial matters	4.17

For linkages and collaborations, the opportunities would be available for faculty and student exchange, the inter-institutional mobility would be enhanced. All these would lead to better linkages with other nations, and industries at home. The opportunities available to us are good interaction with other countries, available alumni abroad, international MoUs and organizations such as SAARC (Table A.11.15). The diversity of flora, fauna and geography must be taken as big opportunity for export of agricultural education under GATS provisions (Table A.11.16). Available trained manpower and its large strength, available quality teachers with world class expertise, cheap labour, English speaking faculty and hardworking people are some of the opportunities available to us for enhancing export of education. In the process many opportunities would be available for improving work culture, international exposure, motivation and incentives,

¹Pawan Agrawal (2006) on page 138-9 also makes an analysis of strength and opportunities for India as a exporter of education. But to avail these opportunities there is a need for a strategic paradigm shift, such as thinking of Special Education Zones (SEZ) as he writes on page 132. Promotion of Indian Higher Education Abroad (PIHEAD) of UGC is wonderful approach in this direction.

better and more employment, recognition of talent and enhanced accountability (Table A.11.16).

The university education system offers few opportunities such as- large network of AUs with English as medium of instruction and availability of strong research system. But as an effort under GATS, it would create many opportunities, it includes- joint ventures in education, compatible government rules, developing competency in selected areas, improvement in eLearning, professional approach of education delivery with international standards, improvement in national standards, development of need based courses with more practical contents and improvement in quality teaching (Table A.11.18). For the institutional and core issues, the most important is cashing the opportunities of niche area of the country and also of AUs and involvement of available cooperatives. The opportunities would be created for identification of niche areas and their potential and also strengthening of NARS (Table A.11.19). In the area of infrastructure, the globalization would offer certain opportunities for development better infrastructure and living conditions together with enhanced availability of professionally useful facilities and other facilities such as sports and games (Table A.11.20) as discussed earlier also, the opportunity of low cost of living and education must be cashed, the globalization would create the opportunity of enhanced funds (Table A.11.21).

11.4. Threats for India with respect to export of agricultural education

Majority of the respondents feel that there is one or other threat. Out of the 579 ideas received for issue no. 10 i.e. threats, only seven ideas are for 'no threat' but majority of the ideas i.e. 390 (64%) support that threats are not from foreigners but these are lying within self that is system threats prevailing in the country itself. Next to it is, threat to the diversity available in the country. The university education system in agriculture and institutional and core issues of NARS also have various threats. Several threats are also available to economic and financial matters in NARS, human resources in the country, infrastructure and linkages and collaborations of AUs (Table 11.4).

Due to system problems, the greatest threat is of faculty shifting² to foreign universities in their campuses in India or abroad, and it is also believed that those who

² Pawan Agrawal (2006) on page 118 writes that the challenge would be selecting and retaining the good teacher.

will shift will be the gem of AUs. Next to is the situation of competing in un-equal environment. Infiltration of undesirable elements of western culture is another threat; international students may be a threat to national security. There may be other threats such as student shift to foreign universities in India, neglect of home students, dilution of IPR and foreign university campuses may not employ the local human resources, for details of systems threats please see table A.11.22.

Table 11.4: Major themes of threats for India with respect to export of agriculture education

S.N.	Threats: themes	% of ideas
1	System threats	67.36
2	Diversity in India	15.89
3	University education systems	4.49
4	Institutional and core issues	4.15
5	Economic & financial matters	3.11
6	Human resources	2.25
7	Infrastructure	1.90
8	Linkages & collaborations	0.86

Diversity in India is the great strength and also can provide wonderful opportunity for export of education but the greatest threat to it is the illegal take away, the second threat to it is the change in unforeseen situations e.g. the foreigners may bring new diseases or new microbial complexes either through lab practices or as human being carriers (Table A.11.23). Like systems threats, the university education system in itself has certain in-built threats; the biggest one is varied regulations from various state governments, not for profit public commitment of NARS. There are several other threats as presented in table A.11.24, the noticeable among them is- neglect of rural students due to English as medium of instruction. Under the theme of institutional and core issues, the greatest threat is change in relationship of different components of NARS; another threat is neglect of those areas which contribute to sustainable agriculture (Table A.11.25). Among the theme of economic and financial matters the two important threats perceived are shortage of funds to less privileged areas and providing low cost education may not be remunerative and competitive (Table A.11.26). The threats would be for human resources also as presented in table A.11.27. The biggest fall out of export and commercialization may be paucity of trained manpower and non-availability of cheap labour; the major threats due to in-built system are- insufficient motivation, rewards and incentives, lack of professional work culture. With respect to theme of infrastructure about 91percent ideas clearly indicate that poor and not maintained infrastructure in itself is a threat, rest of the ideas in this category indicate that existing

poor hygienic & sanitary conditions is a threat for commercial establishment and export of education (Table A.11.28). In the category of linkages and collaboration of the AUs, the respondents discuss the linkage of AUs with many stakeholders including other AUs and foreign universities. Most of the ideas indicate that the biggest threats are inbuilt such as existing poor linkages with the industry, and existing attitude and support from government. Many of the respondents feel that absence of model campuses of AUs must also be taken as a threat (Table A.11.29).

Chapter

12



**Critical
observations**

Chapter 12

Critical observations about Indian higher agricultural education

This chapter is devoted for the rough estimation of the general academic situation in the AUs. As detailed in chapter 3 on methodology, one of the data collection methods was through 'schedule of information' from nodal officers for the project in 22 AUs. The analysis of various critical observations is based on the information provided by the nodal officers. All the nodal officers have not given complete information regarding every parameter; therefore the inferences have been drawn on the basis of information available for the concerned university. The analysis of data is for only 22 AUs, but information so generated can be applied to the complete higher agricultural education system because 22 AUs, means representation of more than 50% of AUs including veterinary universities.

12.1. Human capital and new academic initiatives

With respect to preparations to face the challenges of GATS and globalization, the most important instrument is continuous change; therefore a question was asked from nodal officers to this effect. The information so generated reveals that during 2003-05 lots of changes has occurred in AUs, around 64% of AUs has started a new course and around 23% has started new faculty (Table 12.1).

Table 12.1: New education initiatives taken by AUs during 2003-05

Initiation of	Yes	%	No	%
New college	7	31.82	15	68.18
New course	14	63.64	8	36.36
New faculty	5	22.73	17	77.27

The studied 21 universities have around 30,000 students in the year 2005, which come out to be an average of 1433 students per AU. In the same year, the distribution of the students to UG, PG and PhD courses is in the ratio¹ of 9:3:1 (Table 12.2). The university wise details of the students in various courses is available in table A.12.1.

¹ Dr J.C. Katyal, former DDG (Edn), ICAR in his unpublished paper, refers a study of DST that the ratio of UG, PG and PhD students in agriculture during 1992 was 11:4:1. Information obtained from his invited lecture referred as Katyal (2004).

Table 12.2: Strength and ratio of students in various courses in AUs

Student Strength	UG	PG	PhD	Total
Number*	21352	6330	2412	30094
Average per university	1124	301	121	1433
Ratio	9	3	1	

* On the basis of data received from 21 AUs, the AMU, Aligarh is not included

With respect to availability of teachers in AUs the analysis reveals that about 83 percent of positions are filled up, the number of professors are far more than sanctioned post², and associate professors are almost equal to the sanction posts; it is due to the departmental promotions of faculty members from assistant, associate and finally to the professor. There is a great paucity of assistant professors; around 43% posts are lying vacant (Table 12.3), in AUs about 82.9% posts are filled³. The university wise details of various cadres of teachers' sanctioned and filled-in positions is presented in table A.12.2. As per sanctioned posts the student teacher ratio (STR)⁴ must be 4:1, but actually one teacher is available for five students⁵. Because of availability of professors more than the sanctioned posts, the STR is less than the expected; table 12.4 clearly shows that there is a pressure on assistant professors and associate professors. For the year 2005, the university and category wise STR with respect to sanctioned posts is available in table A.12.3 and with respect to filled-in positions is available in table A.12.4.

Table 12.3: Category wise sanctioned and filled in posts of teachers in AUs*

Designation*	Sanctioned posts	Filled up posts	% Filled up posts
Assistance Professor	6650	3807	57.25
Associate Professor	2839	2901	102.18
Professor	1168	1789	153.17
Total	10913	9052	82.95

* On the basis of data received from 22 AUs

² The prescribed ratio of one professor to two associate professors to six assistant professors stands distorted (Katyal, 2004).

³ In AUs in India out of 23000 sanctioned posts 19000 are filled (Katyal 2004), this is almost same i.e. 82.6% as find out in the present study.

⁴ Anandkrishnan Committee that examined the issue of maintenance grants to Delhi colleges funded by the UGC recommended that annual grants for the colleges should be based on faculty strength guided by optimum student- teacher ratio and teachers' work load (Pawan Agrawal, 2006, page 24).

⁵ In a study of 27 AUs during 1994 it is found that STR was 7.6 (Rama Rao and Murlidhar, 1994 on page C5-72).

Table 12.4: Category wise student teacher ratio (STR)* in AUs

Ratio of Students Vs Sanctioned Post of Teaching Staff			Ratio of Students Vs Available Teaching Staff		
Designation	Students	Sanctioned posts of teacher	Designation	Students	Filled in posts of teacher
Assistant Professor	6	1	Assistant Professor	11	1
Associate Professor	15	1	Associate Professor	14	1
Professor	26	1	Professor	19	1
Total	4	1	Total	5	1

* On the basis of data received from 22 AUs

12.2. Financial implications for AUs

The nodal officers were asked a question about the expenditure incurred by the university per student per annum during 2002-03 and 2003-04. Probably due to non-availability of this information the nodal officers have sent information in different formats, therefore the analysis could be done only for 10 AUs as given in table 12.5. On an average during 2002-04 the AUs annually spent Rs 164,000/- for each student⁶.

Table 12.5: Expenditure (student/annum) incurred by AUs

University	Expenditure per student/annum (Rs)		
	2002-03	2003-04	Average
ANGRAU	10856	11052	10954
HAU	108000	108000	108000
Dr.BSKKV	554000	615000	584500
CIFE	80000	80000	80000
CSAUAT	140667	143000	141833
MPKV	29200	29200	29200
AMU	99000	98000	98500
OUAT	114000	121000	117500
BCKV	245000	266600	255800
MAU	216000	216000	216000
Total	1596723	1687852	1642287
Average	159672	168785	164229

Source: Analyzed on the basis of information from nodal officers at 22 AUs

The AMU, a central university with agricultural faculty spent Rs 98000-99000 annually on each student. For AUs, there is a very high variation in the data e.g. ANGRAU spent around Rs 11,000/-, while per student per annum expenditure of Dr Bala

⁶ Rama Rao and Murlidhar (1994) on page C5-66 report that during 1980-92 an average cost per student passed in SAUs was Rs 1.91 Lakh. Punnayya committee estimated and recommended that per student annual cost on current prices level (1992) for science student must be taken Rs 16,500 (Anant, 2004). But the analysis of the expenditure pattern in higher education (per student/ annum) during 1994-2002 reveals that its always short of recommended amount (Soam and Kalpana Sastry, 2005a) on page 33.

Saheb Konkan Krishi Vidyapeeth was around Rs 584,000/-. Therefore the figures presented in the table 12.5 can be taken as a rough estimation, and AUs can do the triangulation to arrive on any final figure. An effort was made to estimate the operational expenditures of AUs mainly on account of the salary component. On an average the annual salary component of university staff is around Rs 44 crores per annum, out of this Rs 18.5 crores is for teaching staff and around Rs 22 crores is average annual expenditure on account of salary of non-teaching staff (Table A.12.5).

The AUs are public universities, as per GATS provisions, for profit and not for profit institutions make great difference in interpretations of like services. The data received from the nodal officers reveals that the annual fee receipts from students are equal to 7.59% of salary of teaching staff or 7.37% of salary of non-teaching staff or 4.03% of the total salary bill of the total 12 studied AUs⁷ (Table A.12.6). The data received from around 378 HoDs and 1294 faculty members received from 34 AUs and also collected at NAARM reveals the percent distribution of their time on various activities; on an average, HoDs and faculty members spent about 35% and 49% of their time respectively on teaching activity⁸ (table 12.6); the study of all the faculty members including HoDs of 11 AUs reveals that they spent about 50 percent of their time on teaching activity (table A.12.7). Table 12.6 also depicts the monthly average basic salary of various categories of teachers and education managers. The salary of the faculty members' account for teaching and non-teaching activities both. Therefore an effort was made to calculate the salary spent on teaching and its equivalence of the fee received from students towards the basic salary spent on teaching. The complete relevant details required for this study could be provided by 11 AUs only, which are presented in table A.12.7. The average basic salary (university-wise) is available for 11 universities as presented in table A.12.7, which is around Rs 17000/- per month. The study of these 11 AUs reveals that total of the student fee received, covers on an average 22 percent of basic salaries spent on teaching activity, though this average vary from AU to AU as given in the table A.12.7. The annual fee receipts from students consists of several components, if it is assumed that the tuition fee is approximately 30% of the total student fee received, it meets out approximately 6.7% of the basic salary amount spent on teaching time. The details of monthly basic salaries of HoDs and faculty members and

⁷ Pawan Agrawal (2006) on page 29 presents the percent cost recovery of various universities e.g. Punjab University meet out around 50%, UAS- Bangalore meet out less than 5%.

⁸ Rama Rao and Murlidhar (1994) on page C4-53 report that faculty in colleges invest around 43% of their time in teaching, 33.4% in research, around 9% in extension and rest in other activities.

its distribution of equivalence towards the expenditure on various activities are presented in annex tables (see Table A.12.8 and A.12.9).

Table 12.6: Percent time spent by faculty and Heads in AUs on teaching activities and their average basic salary

Category	No. of respondent	Percent time spent on various activities				Average monthly basic salary (Rs)
		Teaching	Research	Extension	Others	
Assist Prof.	484	50.52	30.59	11.77	6.71	13866
Assoc. Prof.	571	49.92	32.33	10.93	6.66	15220
Professor	239	46.03	37.43	9.03	7.31	16792
All faculty	1294	48.82	33.45	10.58	6.89	15004
HoDs (AUs)	263	41.95	30.07	11.15	14.70	19441
HoDs (DUs)	17	30.88	42.65	6.18	20.29	20186
*Heads (C)	38	23.24	18.47	11.53	43.03	20434
Assoc Dean	13	31.08	22.77	15.00	30.38	20446
# I/c HoDs	47	47.98	28.94	9.89	12.13	19429
All HoDs	378	35.03	28.58	10.75	24.11	19987

* Heads of colleges known as Principals/Deans/Director; # Professors or Principal scientists.

12.3. Financial implications for students

The university fees, monthly living expenditure and scholarships are some of the concerns, which were investigated with the help of receipt of the data from nodal officers about 22 AUs. The fee for home students and foreign students was calculated; it varies from discipline to discipline as given in the table 12.7. For Indian students currently on an average the fee for complete PG program is less than Rs 16000/-, while same is around Rs 31500/- for an international student. The fee for agribusiness management and biotechnology etc is highest.

Low cost of education has been considered as great strength of education in India, the monthly average cost on boarding and lodging for Indian and foreign students staying the hostels of AUs is given in the table 12.8. Scholarship is the most important means of encouraging talented students, the data from 21 AUs reveals that 16 percent of students in the university receive the scholarships (Table 12.9). In studied AUs 15% of UG, 21% of PG and 19% of doctoral students receive scholarships⁹.

⁹ In India on higher education, the expenditure on account of scholarships (% of total expenditure on higher education) varied from 0.15-0.4 during 94-95 to 200-01 (Soam and Kalpana Sastry, 2005a, on page 34). The same paper on page 35 discusses the expenditure pattern on agricultural higher education in the country.

Table 12.7: Current fee for one whole academic program for Indian and foreign students

S. N.	Faculty	*Course fees for Indian students (Rs)		*Course fees for Foreign students (Rs)	
		PG	PhD	PG	PhD
1	Agriculture	12545	21379	202810	293576
2	Dairy Science	11325	19280	227140	348540
3	Engineering	17637	27147	207700	296421
4	Fisheries	17317	21283	328050	492075
5	Forestry	9713	18675	328050	492075
6	Home Science	13009	22093	237803	411825
7	Horticulture	10564	15424	219033	328550
8	Veterinary	18644	33025	186037	294720
9	MBA, Biotechnology, Food Science, Agribusiness Management	30964	-	904050	-
	Total Average	15746	22288	315630	369723

*Average of data provided by various nodal officers at 22 AUs

Table 12.8: Current approximate monthly expenditure on boarding and lodging

Students	Lodging (Rs)	Boarding (Rs)	Total (Rs)
Indian students	606	1363	1728
Foreign students	1115	4617	5732

Table 12.9: Number of students in AUs receiving scholarships

Degree Programme	Number of students receiving scholarships	Total number of students in universities*	% of students receiving scholarships
UG	3109	21352	14.56
PG	1344	6330	21.23
PhD	460	2412	19.07
Total	4913	30094	16.33

* On the basis of data received from 21 AUs; the AMU, Aligarh is not included

Chapter

13



**Summary and
conclusion**

Chapter 13

Summary and Conclusion

India had no commitments under the Uruguay Round in higher education services. However included higher educational services in its Revised Offer in August 2005. Agricultural education in particular has been viewed in many developing countries as a significant contributor to sustainable development and poverty alleviation, therefore has certain specific implications with respect to GATS. In view of its public mandate, higher education in most countries is regulated by competent bodies. However, higher education as a service recognized under the GATS of the WTO. It is therefore subject to WTO's essential principles of promoting trade liberalization, market access and equitable treatment to all participants. But, very little is known about the consequences of free trade in educational services. Also it is difficult to define which educational services are strictly commercial and which are public services. As a result, application of GATS can lead to disputes, unless the definitions and concepts such as 'like services' are clear and international standards are in place, like in the case of other WTO agreements such as TRIPS, SPS and TBT.

Global trade in higher education is large; it is estimated at more than US\$30 billion per annum. International student mobility amounts to a minimum of 3 percent of global services exports. The major exporters of education are the USA, UK, Canada, New Zealand and Australia. For example during 2003, overseas students in Australia contributed to educational export worth AUS\$7.5 billion representing this sector as Australia's third largest service export. India and China are the major importers of education from USA, UK and Australia. Asia contributes 57 percent and 80 percent, while India contributes 13.9 percent and 11 percent of international students in USA and Australia respectively.

During 2006, Department of Commerce, Government of India prepared a consultation paper, this paper addresses several concerns related to GATS and its implication in higher education. These concerns are given below; most of them have been addressed by the present study in context of higher agricultural education:

1. What are the areas of potential for expanding education services in India? Are we in a position to meet these demands internally?
2. Whether India should allow Foreign Education Providers in a phased manner, after domestic reforms are in place or not at all?
3. What should be the way in which foreign educational institutions can deliver services in India: through a joint venture or a wholly owned subsidiary?
4. What would be the role of the UGC/AICTE and that of the regulatory body in the home country of the foreign education providers?
5. How would the issues of liability and student welfare be handled in cases involving foreign educational institutions?
6. What should be a logical response to the various requests made on India at the WTO under the on-going plurilateral negotiations? (The requests received include expansion of the coverage of higher education to include both post-secondary technical and vocational education services and other education services and removal of present market access limitations such as fees do not lead to charging capitation fees or profiteering etc.)
7. Whether negotiations under General Agreement on Trade in Services (GATS) could be used as an opportunity by India to attract investment in higher education and also explore export markets?
8. Whether efforts should be made to harmonize our licensing and qualification requirements and procedures to world standards so as to create linkages of higher education to export of professional services? (Example: NASSCOM's initiative of the National Skills Registry for IT / ITES to improve recruitment practices and build the confidence of global companies in Indian professionals).
9. How much flexibility can be given to foreign education providers in the areas of setting fees, admission, hiring of teachers, course and syllabi?
10. Whether it would be desirable to have an accreditation mechanism to ensure quality?
11. Whether compulsory self-disclosure by private education providers (both Indian and foreign) could be introduced to address the problems of misrepresentation? (For example, in USA, students' 'Right to Know' requirement under the provisions of the Higher Education Act of 1965 and Freedom of Information Act requires the disclosure of financial assistance and institutional information to students.)

12. How can the accreditation mechanism be strengthened? Is there a role for private accreditation agencies?
13. Is there a market for Indian education services abroad?
14. If yes, what is the potential for expansion to get market access in other countries?
15. In future, which countries will be important export destinations for education services? What type of education services can be anticipated for exporting in the future?
16. What are the barriers being faced by the Indian educational institutions, in opening campuses abroad?

India can benefit from GATS only if constraints are converted to opportunities through effective international collaborations coupled with an efficient marketing strategy in place. The financial constraints could be converted to financial gains if the quality of education and infrastructure of international standards are created in the AUs. Foreign students, especially from developing nations of Asia and Africa, may be attracted to Indian universities on account of availability of expertise and cheaper education in comparison to the developed nations. Special financial incentives in the form of scholarships, grants, loans and liberal work permits would enhance the number of international students in the campuses of AUs. But limitations imposed by poor websites of the AUs in India can be a severe limitation. In the present study it was found that, out of the 38 AUs, only one could score the rank equal to the universities in India, which are very well known for the large strength of the foreign students.

The cross border supply under mode-2 has not been given much priority by the AUs in the present survey, only about half of the respondents believe that their subject can be taught as DE, same proportion of respondents also believe that they are not ready for this mode of service supply. Cross border supply India has lot of other challenges, for example during 2003-08 actual revenue and forecast reveals that the growth in eLearning revenues in developed nations would be very high, India would have major challenge from developing nations in Asia because its revenue from eLearning would be less than these countries. Compound Annual Growth Rate (CAGR) of India would be far less than Korea and China; another significant finding is that in total eLearning revenue of Asia pacific region, the percent share of India would go down

For attracting foreign students under mode of consumption abroad, India also has much strength that can be used to attract students even from developed nations through joint degree programs or twinning programs. These include a large number of English speaking faculty members and the range of diversity available in plants, animals and climate. However, many policy initiatives, at both domestic and international levels, are required before the opportunities can be capitalized. These include ranking and accreditation of Indian universities at national level, international system of recognition of qualification, and development of international standards in education, as available for goods covered under other agreements of the WTO. In order to develop suitable policy for increasing India's revenue from export of educational services, some additional factors listed below must also be given due considerations:

1. The growth rate of Indian student mobility to developed nations is significantly higher than from any other Asian country.
2. China and South East Asian countries like Singapore and Malaysia are main competitors, not only for attracting foreign students but also retaining Indian students at home universities. Among the top 200 universities included in this study, three in each of China, Hong Kong and South Korea, and one each in India and Taiwan. China is heavily investing in improving its best universities with the aim of making them world class (Altbach, 2005). For trans national education in these countries the proportion of Indian students is likely to increase in the coming years.
3. India's best universities require sustained state support to develop excellence.
4. India has the potential to export educational services to various developing nations and least developed nations in Africa, Latin America, West Asia, Middle East and South Asia. But Australia's policy of establishing branch campuses in South East Asia and Central Asia would be the major challenge for India to attract foreign students from these countries in south Asia and East Asia and Pacific.

For commercial presence, the majority of the faculty members of AUs perceived linkages and collaborations as the most important strategic issue, followed by marketing strategy and development of joint educational delivery systems with foreign universities.

The analysis of ideas generated regarding the establishment of strategic linkages and collaborations shows that the most important method to achieve this is to sign Memorandum of Understanding (MoU) with foreign universities for research projects (21%) followed by mutual exchange of faculty (15%) and devising joint educational programmes outside the country (11%). The remaining ideas related to several other issues of less significance. Similarly, in the category of the marketing strategy, 35 percent of the ideas favoured development of informative websites, followed by publicity through exhibitions and seminars abroad (12 %) and through the Internet (10%). For the development of joint educational programs with foreign universities, initiation of the joint degree programs and twinning programs received the top priority (65% of ideas generated for this section), followed by distance education (20%). As India is a net importer of education under this mode, institutions like UGC, ICAR and VCI have to play greater role in accreditation and quality assurance.

Marketing and strategic alliances have been identified as most important strategies to cash the benefits of GATS. The details are discussed in the chapter 10 and 11. Department of Education, Science and Training (DEST) of Australian Government has prepared a document on strategic alliance management, which suggest 10 point guidelines for strategic alliances management, almost all of them have great relevance in the Indian context also, these guidelines are:

1. Formulate a Winning Strategy
2. Ensure Clarity of Objectives
3. Select a Suitable Strategic Partner
4. Develop Core Competencies in Collaboration
5. Establish an Effective Governance Structure
6. Actively Manage Cultural Challenges
7. Protect IP and Brand
8. Align Decision Rights to Create and Capture Value
9. Build Core Capabilities in Change Management
10. Agree an Exit Strategy out of alliance

Foreign Directed Investments (FDI) may promote economic growth of a developing country; it is especially true when an absorptive capability of the advance

technologies is available in the host country. Therefore policy in pursuance of GATS obligations must not hinder the infrastructure development of national education system. GATS does not differentiate between different kinds of higher education, but pre-implementation circumstances and post implementation effects on the society differentiate between other higher education and agricultural education, which has very high local content. Commitments must be debated and negotiated after careful scrutiny of issues related to balancing role of private and public sector, relevant horizontal and specific limitations, subsidies, scholarships and grants, education trade in bilateral and plurilateral political agenda, international system of recognition of qualification, and provisions for accreditation, protection of intellectual property rights and safeguard mechanisms for developing nations.

Chapter

14



**Action
framework**

Chapter 14

Action Framework

On the basis of the findings discussed in the previous chapters, the recommendations can be drawn on various aspects of educational strategy; these are summarized in various academic and policy parts as given below:

1. Preferences of efforts and the choice of mode of delivery of service

- Among the mode-1, 2 and 3 from best interests of the AUs, the consumption abroad (Mode-2) must be the most preferred service supply, which will be in favor of AUs of the country, it follows the commercial presence (Mode-3), and cross border supply (Mode-1) must be the last choice. The actions from various stakeholders may be taken accordingly giving emphasis to mode-2 and mode-3, the mode-1 can be a last choice.

2. Cross border supply: India as exporter

- Around 54 percent respondents feel that their subjects cannot be taught through DE, therefore extensive list of subjects to be prepared for the purpose. Non-formal degree courses have better scope.
- Willingness of initiating courses through DE is not very high
- China, Taiwan, Hong Kong and Singapore are the major competitors

3. Cross border supply: India as importer

- Degrees through DE offered by foreign universities can reduce mobility of Indian students going abroad.
- Agriculture is a practical subject, colleges would be ready to support any foreign DE provider in various spheres such as theory classes, practical, examinations etc.

4. Consumption abroad: India as exporter

- Poor strategic infrastructure development is the most important limiting factor contributing to less number of foreign students in their campuses.

The second most important factor is the lack of marketing strategy. For many AUs infrastructure is not constraints, rather other factors are important such as lack of marketing, government policies, lack of initiatives by the university administration etc.

- Faculty members favour the reservation of the quota for international students, most of the HoDs did not answer the question related to this, though an indication have been given for around 10 percent.
- Postgraduate courses have the largest chances to attract foreign nationals. The important subjects are biotechnology (crop as well as animal sciences), horticulture (fruit sciences), aquaculture, agri-business management, farm machinery and power, food and nutrition and agronomy and tea husbandry, that are top most subjects in various divisions to draw attention of foreign students.
- International students may be attracted to new courses on subjects that are not presently available in AUs. These subjects are sustainable agriculture & natural resources management, fashion technology, agro-biodiversity; the topmost subject in this category is bio-informatics.
- For attracting international students the AUs must aim the developing nations of Asia, this category of nations can be the top student sending countries. Next in the preference must be the developing nations of Africa.
- Marketing strategy would be the best strategy to increase number of international students in AUs, it is more important than linkages and collaborations but these two are most important to attract international students. Marketing and publicity through web, media, advertisements abroad and Internet, in order of their importance must be the top priority in attracting international students. Infra-structural development and maintenance of educational standards and quality through accreditation, ranking or certification through reputed certification agencies would greatly help. Develop strategic linkages and collaborations; keep the provisions of scholarships, fellowships and assistantships for foreign students.

- Foreign students in AUs would boost the export of rural items such as traditional art/artifacts/music/rural technology and rural products from local region.

5. Consumption abroad: India as importer

- India is major student sender country; the preferred arrangement for sending students abroad is that ICAR can provide scholarship to talented students with certain terms of references. The second best options is that talented students should go under twining degree program of Indian and foreign universities (part in India and part in abroad).
- Develop center of excellence in those disciplines where students mostly go abroad

6. Commercial presence: India as exporter

- Strategic linkages and collaborations are more important than the marketing, but these two are most important to have significant commercial presence of AUs abroad
- The faculty members of AUs do not prefer setting up of branch campuses abroad rather they prefer joint educational delivery systems mainly in the mode of joint degree programs, the twinning programs are the second option.
- The best method of establishing abroad is the joint degree program between AU and a foreign university at its campus abroad, where faculties from AU go abroad to deliver part of their courses. The second option is a twining program between AU and a foreign university at its campus abroad, and students come to AU for partial fulfillment of degree. Setting up campuses abroad to be kept at low priority.
- Developing nations to be given highest priority for establishing the commercial presence to attract students from there. For joint and twinning program the preferred nations are the developed nations. It means collaborations and linkages would help in drawing students from developing nations. Among developed nations the highest preference to be given to high-income OECD countries (especially USA, UK and Australia). After high-income OECD countries, the second most important

choice is developing nations of South Asia, and East Asia and Pacific (especially Thailand, China and neighboring countries such as Nepal, Srilanka and Pakistan).

- AUs have done the least effort in establishing the commercial presence abroad, therefore the efforts to be done in a larger way. One approach is Promotion of Indian Higher Education Abroad (PIHEAD) project of UGC, either AUs may be the part of this program or ICAR can initiate its own program on the similar lines.

7. Commercial presence: India as importer

- The ideal and best approach from India's interest would be a twinning program between a foreign university and AU at its campus, and students go to partner foreign university abroad for partial fulfillment of degree. The second option must be a joint program between a foreign university and AU at its present campus, where official representatives from abroad come to deliver part of their courses at AU. Opening of campuses by foreign universities must be discouraged, as it will not be in the interest of the country.
- In the opinion analysis it is clearly found that foreign universities may actually give top priority to joint collaborations/ twinning programs. The second preferred approach may be starting the campus in collaboration with AUs, and the least preference would be opening the campus independently.
- About 80 percent of faculty members say that their AUs are prepared to face competition with foreign universities if these universities open their campuses in the country. Those who are not prepared mainly attribute to poor infrastructure and fund paucity. About 57 percent respondents believe that both private and public universities can be allowed.

8. Strategic linkages and collaboration

- Strategic linkages and collaboration emerged as one of the major theme, and main sub-themes under this head are establishing counseling centers abroad, eliciting greater role of embassies/ consulates for linkages and mutual exchange of students.

- MoUs for research, exchange of faculty and students for joint educational programs, establishment of off shore campuses, role of NRIs, alumni and consulates and embassies is also of paramount significance.
- Invitations to faculty from abroad as a teaching faculty at AU must be encouraged in all forms such as regulatory measures, visa provisions and remuneration etc. it will facilitate the linkages and collaborations. A foreign matters cell in the AUs can facilitate such kind of moves.
- Diversity in India is greatest strength, which can be used to foster the growth of linkages and collaborations

9. Policy and regulatory requirements

- Majority of the HoDs have not given any indication of fee for international students for various courses for various faculties, either the fee matter can be same for all AUs or AUs can decide as their own matter. HoDs have given an indication that for UG course the fee can be <Rs one lakh except for veterinary, where it can be between 1-2 lakhs. For PG course 1-2 lakh except for veterinary, where it can be more than 3 lakhs.
- Entry of foreign universities to be monitored and controlled through administrative and regulatory mechanisms, the most favoured would be procedural regulations such as registration, accreditation and monitoring by a national agency.
- International recognition of the degree, harmonization of national and international standards
- Market survey and networking to be facilitated as an instrument of preparedness
- Removing two most important weaknesses. Weaknesses in human resource such as the faculty members are not trained, they do not have international exposure, constraints in factors such as personality and motivation etc. equally important is the removal of system weaknesses related to day to day functioning of AUs.
- Certain threats to be looked into for getting the benefit of GATS. Most of the threats are not from foreigners but these are lying within self that is system threats prevailing in the country itself. Next to it is, threat to the diversity available in the country. Another severe threat is of faculty

shifting to foreign universities in their campuses in India or abroad, and it is also believed that those who will shift will be the gems of AUs.

- Poor international exposure of faculty members, the teachers to be given enough liberty encouragement and support to enhance their international exposure especially as an invited teaching faculty abroad.



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Annex Tables

Table A.3.1: List of AUs with analysis of questionnaire sent to and filled-in received from

University	NC*	Faculty*			HoD*			Head of college*			Total*		
		A	B	C	A	B	C	A	B	C	A	B	C
ANGRAU	3	75	69	92.0	30	19	63.3	4	4	100	109	92	84.4
BAU	3	75	-	0.0	30	-	0.0	3	-	0	108	0	0.0
BCKV	3	75	14	18.7	30	6	20.0	3	1	33	108	21	19.4
CCS-HAU	6	150	141	94.0	60	49	81.7	6	6	100	216	196	90.7
CSAU&T	3	75	32	42.7	30	10	33.3	3	1	33	108	43	39.8
CSK-HPKV	4	100	77	77.0	40	14	35.0	4	4	100	144	95	66.0
GAU (A)	3	75	62	82.7	30	26	86.7	3	3	100	108	91	84.3
GAU (J)	2	50	46	92.0	20	17	85.0	2	2	100	72	65	90.3
GBPUA&T	8	200	112	56.0	80	34	42.5	8	4	50	288	150	52.1
IGKVV	3	75	12	16.0	30	-	0.0	3	1	33	108	13	12.0
JNKVV	3	75	2	2.7	30	-	0.0	3	-	0	108	2	1.9
KAU	6	150	44	29.3	60	21	35.0	6	3	50	216	68	31.5
Dr BSKKV	2	50	37	74.0	20	10	50.0	2	2	100	72	49	68.1
KVAFSU	1	25	19	76.0	10	10	100.0	1	1	100	36	30	83.3
MAU	5	125	49	39.2	50	15	30.0	5	1	20	180	65	36.1
MPKV	2	50	43	86.0	20	13	65.0	2	2	100	72	58	80.6
MPUAT	4	100	87	87.0	40	26	65.0	4	2	50	144	115	79.9
NDUAT	4	100	38	38.0	40	8	20.0	4	2	50	144	48	33.3
OUA&T	5	125	117	93.6	50	22	44.0	5	4	80	180	143	79.4
PAU	5	125	3	2.4	50	-	0.0	5	-	0	180	3	1.7
UPPDVU	1	25	-	0.0	10	-	0.0	1	-	0	36	0	0.0
Dr PDKV	5	125	90	72.0	50	13	26.0	5	3	60	180	106	58.9
RAU (B)	3	75	3	4.0	30	-	0.0	3	-	0	108	3	2.8
RAU (P)	2	50	31	62.0	20	13	65.0	2	-	0	72	44	61.1
SVBPUA&T	2	50	3	6.0	20	-	0.0	2	-	0	72	3	4.2
TANUVAS	1	25	9	36.0	10	-	0.0	1	-	0	36	9	25.0
TNAU	5	125	4	3.2	50	-	0.0	5	-	0	180	4	2.2
UAS (D)	2	50	6	12.0	20	-	0.0	2	-	0	72	6	8.3
CAU	1	25	14	56.0	10	5	50.0	1	-	0	36	19	52.8
AMU	1	25	15	60.0	10	4	40.0	1	1	100	36	20	55.6
BHU	1	25	-	0.0	10	-	0.0	1	-	0	36	0	0.0
CIFE	1	25	21	84.0	10	8	80.0	1	-	0	36	29	80.6
IVRI	1	75	18	24.0	10	9	90.0	0	-	0	85	27	31.8
NDRI	1	75	32	42.7	10	7	70.0	0	-	0	85	39	45.9
GRI	1	25	-	0.0	10	-	0.0	1	-	0	36	0	0.0
Others		16	16	-	-	0	-	-	0	-	16	16	-
Total	103	2691	1266	47.0	1030	359	34.9	102	47	46	3823	1672	43.7

* NC: Number of colleges; A: Number of questionnaire sent; B: Number of questionnaires received from AU; C: Percent recovery of filled-in questionnaires

Table A. 4.1: list of surveyed universities and information of Questionnaires sent and received with their percent feedback

S.N.	University	No of colleges	Questionnaire sent				Questionnaire received				Percent feed back			
			Faculty	HOD	Dean	Total	Faculty	HOD	Dean	Total	Faculty	HOD	Dean	Total
1	ANGRAU	3	75	30	3	108	69	19	4	92	92	63	133	85
2	BAU	3	75	30	3	108	-	-	-	-	-	-	-	-
3	BCKV	3	75	30	3	108	14	6	1	21	19	20	33	19
4	CCS-HAU	6	150	60	6	216	141	49	6	196	94	82	100	91
5	CSAUA&T	3	75	30	3	108	32	10	1	43	43	33	33	40
6	CSK-HPKV	4	100	40	4	144	77	14	4	95	77	35	100	66
7	GAU (A)	3	75	30	3	108	62	26	3	91	83	87	100	84
8	GAU (J)	2	50	20	2	72	46	17	2	65	92	85	100	90
9	GBPUA&T	8	200	80	8	288	112	34	4	150	56	43	50	52
10	IGKVV	3	75	30	3	108	12	-	1	13	16	-	33	12
11	JNKVV	3	75	30	3	108	2	-	-	2	3	-	-	2
12	KAU	6	150	60	6	216	44	21	3	68	29	35	50	31
13	KKV	2	50	20	2	72	37	10	2	49	74	50	100	68
14	KVFAS	1	25	10	1	36	19	10	1	30	76	100	100	83
15	MAU	5	125	50	5	180	49	15	1	65	39	30	20	36
16	MPKV	2	50	20	2	72	43	13	2	58	86	65	100	81
17	MPUAT	4	100	40	4	144	87	26	2	115	87	65	50	80
18	NDUAT	4	100	40	4	144	38	8	2	48	38	20	50	33
19	OUA&T	5	125	50	5	180	117	22	4	143	94	44	80	79
20	PAU	5	125	50	5	180	3	-	-	3	2	-	-	2
21	PDDUPVVV	1	25	10	1	36	-	-	-	-	-	-	-	-
22	PDKV	5	125	50	5	180	90	13	3	106	72	26	60	59
23	RAU (B)	3	75	30	3	108	3	-	-	3	4	-	-	3
24	RAU (P)	2	50	20	2	72	31	13	-	44	62	65	-	61
25	SVBPUAT	2	50	20	2	72	3	-	-	3	6	-	-	4
26	TANUVAS	1	25	10	1	36	9	-	-	9	36	-	-	25
27	TNAU	5	125	50	5	180	4	-	-	4	3	-	-	2
28	UAS (D)	2	50	20	2	72	6	-	-	6	12	-	-	8
29	CAU	1	25	10	1	36	14	5	-	19	56	50	-	53
30	AMU	1	25	10	1	36	15	4	1	20	60	40	100	56
31	BHU	1	25	10	1	36	-	-	-	-	-	-	-	-
32	CIFE	1	25	10	1	36	21	8	-	29	84	80	-	81
33	IVRI	1	75	10	-	85	18	9	-	27	24	90		32
34	NDRI	1	75	10	-	85	33	7	-	40	44	70		47
35	GRI	1	25	10	1	36	-	-	-	-	-	-	-	-
36	Others	-	15	-	-	15	15	-	-	15	-	-	-	-
	Total	103	2690	1030	101	3821	1266	359	47	1672	47	35	47	44

Table A.6.1: List of ranking of universities with respect to their websites

S.N.	University	Score	Rank
I	State Agricultural Universities		
1.	Punjab Agricultural University	38	1
2.	Acharya N G Ranga Agricultural University	35	2
3.	Ch. Sarwan Kumar Krishi Vishwa Vidyalaya	33	3
4.	Jawaharlal Nehru Krishi Vishwa Vidyalaya	27	4
5.	Kerala Agricultural University	26	5
6.	Maharashtra Animal Science & Fisheries Sciences University, TNAU, CSAUAT	25	6
7.	MPUAT, Mahatma Phule Krishi Vidyapeeth, RAU	24	7
8.	Dr. Yashwant Singh Parmar University of Horticulture & Forestry, OUAT	23	8
9.	Govind Ballabh Pant University of Agriculture and Technology	20	9
10.	Assam Agricultural University	16	10
11.	Birsa Agricultural University	16	10
12.	Narendra Dev University of Agriculture and Technology	16	10
13.	Tamil Nadu Veterinary & Animal Sciences University	16	10
14.	University of Agricultural Sciences	15	11
15.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth	13	12
16.	Marathwada Agricultural University	7	13
17.	Navsari Agricultural University	7	13
18.	University of Agricultural Sciences	4	14
19.	West Bengal University of Animal & Fishery Sciences	4	14
20.	Sher-e-Kashmir University of Agricultural Sciences & Technology Kashmir	3	15
II	Deemed Universities		
1	Allahabad Agricultural Research Institute	51	1
2	Indian Veterinary Research Institute	22	2
3	Central Institute of Fisheries Education	20	3
4	Indian Agricultural Research institute	16	4
III	Top 5 Non- AUs		
1	University of Delhi	37	1
2	University of Pune	36	2
3	University of Mysore	33	3
4	Osmania University	31	4
5	Manipal Academy of Higher Education	27	5
IV	Private Universities		
1	ICFAI, ISB	31	1
2	Manipal Academy of Higher Education	27	2
V	Central Universities		
1	Banaras Hindu University	42	1
2	Aligarh Muslim University	39	2
3	Visva-Bharathi	31	3

Table A.7.1: List of reasons contributing to lesser number of international students in AUs

S.N.	Reasons	N	%
1	Absence of strategic infrastructure development		
	Lack of good general infrastructure	164	38.23
	Unfavorable geographic locations in terms of geo climatic features, airline connections etc	150	34.97
	Insufficient teaching, research and lab facilities	54	12.59
	No standard accommodation/hostel/living conditions	49	11.42
	New university campus	12	2.80
2	Poor marketing strategy		
	Poor publicity and advertisement	137	47.74
	Lack of awareness and information	118	41.11
	Poor image building, reputation	25	8.71
	No quota for foreign students	7	2.44
3	Education quality and standards		
	Course, Need based degree, Curriculum	64	37.43
	Lack of Quality education/ teaching	49	28.65
	International standards and accreditation, ranks	30	17.54
	Language problem	23	13.45
	Recognition of AUs degree in abroad	5	2.92
4	Improper financial strategy		
	Insufficient scholarships, Assistantships, Incentives, loans	101	61.21
	Funds, financial crunch/crisis	48	29.09
	Fees structure, expensive, high cost of education, cost of living in other country	16	9.70
5	Incompetent strategic policy development		
	University policy	50	41.32
	Government policy	36	29.75
	Visa and foreign policy	14	11.57
	Lack of motivation, initiatives, guidance, counseling, vision, planning	8	6.61
	Lack of rules, regulations, guidelines, acts	8	6.61
	Security constraints	5	4.13
6	No strategic linkages and collaborations		
	No communication, Interaction, counseling, co-operation, liasoning	28	24.14
	No Collaboration programmes	27	23.28
	No exchange programmes	20	17.24
	India not in International scene	20	17.24
	No MOU	11	9.48
	No Commercial Presence	5	4.31
	No Joint Degree Programme	5	4.31
7	Inefficient HRD strategy		
	Lack of qualitative attributes of teacher, quality teaching	37	38.54
	Insufficient number	34	35.42
	Personality traits of teachers	18	18.75

S.N.	Reasons	N	%
	Not enough globally recognized teachers and teaching	7	7.29
8	Weak student support services		
	Less International placement cell and Job opportunities	49	64.47
	No simplified admission procedure	25	32.89
	Work permit for limited hours	2	2.63
9	Personal preference and choice of foreign students		
	Preference given to developed countries	16	32
	Affinity towards other professional subjects other than Agriculture	15	30
	Preference to other universities in India and abroad, Competitions	9	18
	Availability in their own country	6	12
	Poor image of India, Indian Universities, Unwillingness to study in India among foreign students	4	8
10	System Weaknesses		
	Social cultural problems	15	78.95
	Bureaucratic setup, Red tapism and corruption, Political interference	4	21.05

Table A.7.2: Annual fees as proposed by HoDs at AUs for foreign students

S. N.	Faculty	Degree	Fees Structure (Rs)									
			No response	%	<1 lakh	%	1-2 lakhs	%	2-3 lakhs	%	>3 lakhs	%
1	Agriculture	UG	364	89.66	22	5.42	12	2.96	6	1.48	2	0.49
		PG	361	88.92	15	3.69	14	3.45	10	2.46	6	1.48
		PhD	366	90.15	7	1.72	16	3.94	4	0.99	13	3.20
2	Dairy Science	UG	388	95.57	7	1.72	6	1.48	3	0.74	2	0.49
		PG	391	96.31	2	0.49	7	1.72	2	0.49	4	0.99
		PhD	391	96.31	2	0.49	6	1.48	1	0.25	6	1.48
3	Engineering	UG	382	94.09	12	2.96	6	1.48	2	0.49	4	0.99
		PG	383	94.33	6	1.48	8	1.97	5	1.23	4	0.99
		PhD	390	96.06	4	0.99	6	1.48	4	0.99	2	0.49
4	Fisheries	UG	395	97.29	6	1.48	3	0.74	1	0.25	1	0.25
		PG	390	96.1	3	0.74	6	1.48	2	0.49	5	1.23
		PhD	390	96.1	3	0.74	5	1.23	1	0.25	7	1.72
5	Forestry	UG	393	96.8	7	1.72	4	0.99	1	0.25	1	0.25
		PG	396	97.5	1	0.25	7	1.72	2	0.49	0	0
		PhD	397	97.78	1	0.25	5	1.23	1	0.25	2	0.49
6	Home Science	UG	386	95.07	10	2.46	7	1.72	3	0.74	0	0.00
		PG	389	95.81	6	1.48	5	1.23	5	1.23	1	0.25
		PhD	388	95.57	4	0.99	6	1.48	0	0.00	8	1.97
7	Horticulture	UG	394	97.04	8	1.97	3	0.74	0	0.00	1	0.25
		PG	391	96.31	3	0.74	6	1.48	3	0.74	3	0.74
		PhD	392	96.55	3	0.74	5	1.23	1	0.25	5	1.23
8	Veterinary Science	UG	368	90.64	9	2.22	12	2.96	7	1.72	10	2.46
		PG	372	91.63	4	0.99	11	2.71	7	1.72	12	2.96
		PhD	372	91.63	5	1.23	9	2.22	7	1.72	13	3.20
9	Other courses	UG	399	98.28	4	0.99	3	0.74	0	0.00	0	0.00
		PG	395	97.29	3	0.74	4	0.99	2	0.49	1	0.25
		PhD	397	97.78	3	0.74	2	0.49	2	0.49	1	0.25

Table A.7.3: Rating of Infrastructure facilities at AUs by foreign students

Rating	Accommodation		Food		Library		Internet		Laboratory		Teaching Quality		Education Quality	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Not Satisfactory	4	12.12	8	32.00	2	9.52	14	43.75	2	6.45	1	3.23	0	0
Satisfactory	14	42.42	14	56.00	3	14.29	2	6.25	12	38.71	10	32.26	9	29.03
Good	12	36.36	3	12.00	12	57.14	10	31.25	11	35.48	7	22.58	11	35.48
Very Good	3	9.09	0	0.00	4	19.05	6	18.75	6	19.35	13	41.94	11	35.48
Total	33	100	25	100	21	100	32	100	31	100	31	100	31	100

Table A.8.1: The priority of faculty members of AUs with respect to various countries within different global geographical groups to initiate joint program and establish satellite campuses

Global geographical groups and countries	No. of responses			Weighted score*
	Priority1	Priority 2	Priority 3	
High-income OECD Countries				
USA	436	118	75	1619
UK	69	229	101	766
Australia	70	133	185	661
Canada	35	77	76	335
Japan	22	49	56	220
Germany	11	23	54	133
Netherlands	12	15	21	87
New Zealand	6	21	17	77
Denmark	5	5	7	32
France	2	6	13	31
Korea, Rep.	2	4	4	18
Sweden	2	1	3	11
Switzerland	2	1	3	11
Norway	1	2	1	8
Italy	1	1	2	7
Belgium	0	1	4	6
Developing Nations of South Asia				
Nepal	56	24	22	238
Sri Lanka	31	29	34	185
Bangladesh	17	33	23	140
Pakistan	8	8	18	58
Afghanistan	2	11	11	39
SAARC Countries	8	5	0	34
Mauritius	4	2	2	18
Bhutan	1	4	3	14
Maldives	0	0	7	7
Any Asian country	8	16	7	63
Developing Nations of Sub Saharan Africa				
Ethiopia	35	25	13	168
South Africa	27	11	11	114
Nigeria	10	8	8	54
Kenya	5	4	8	31
Zambia	2	2	0	10
Botswana	0	3	3	9
Sudan	1	2	2	9
Uganda	0	4	0	8
Zimbabwe	0	3	0	6

Global geographical groups and countries	No. of responses			Weighted score*
	Priority1	Priority 2	Priority 3	
Eritrea	0	2	1	5
Tanzania	1	1	0	5
Ghana	1	0	1	4
Any African country	45	33	25	226
Developing Nations of East Asia and Pacific				
China	51	38	40	269
Thailand	19	14	16	101
Philippines	11	17	13	80
Malaysia	3	7	10	33
Indonesia	3	4	15	32
Myanmar	3	6	0	21
Vietnam	0	1	7	9
Fiji	0	2	3	7
Taiwan	1	1	0	5
Any East Asian Country	8	6	4	40
High-income Non-OECD Countries				
Israel	34	20	25	167
Gulf Countries**	25	24	17	140
Singapore	4	4	5	25
Hong Kong	0	1	0	2
Any European Country	0	7	7	21
Developing Nations of Middle East and North Africa				
Iran	6	17	5	57
Iraq	2	4	3	17
Jordan	3	0	0	9
Egypt	0	2	3	7
Syria	1	2	0	7
Algeria	0	0	1	1
Libya	0	0	1	1
Any Middle East Country	9	10	12	59
Developing Nations of Latin America and the Caribbean				
Brazil	8	7	13	51
Latin America countries	1	6	6	21
Cuba	1	0	2	5
West Indies	0	1	0	2
Argentina	0	0	1	1
Developing Nations of Europe and Central Asia				
Russian Federation	5	9	25	58
Bulgaria	0	1	0	2

* Σ Priority1 X 3+Priority2 X 2+ Priority3 X 1

**Gulf countries include Bahrain, Dubai, Kuwait, Qatar, Saudi Arabia, and UAE

Table A. 8.2: The list of countries of the universities suggested by HoDs for joint program or twinning program

Global geographical groups and Countries	Frequency	%
High-income OECD Countries	1157	83.12
USA	695	49.93
UK	200	14.37
Australia	66	4.74
Canada	66	4.74
Netherlands	43	3.09
Japan	23	1.65
Germany	19	1.36
Sweden	7	0.50
New Zealand	6	0.43
France	6	0.43
Belgium	4	0.29
Denmark	4	0.29
Switzerland	4	0.29
Korea	4	0.29
Scotland	3	0.22
Norway	3	0.22
Italy	2	0.14
Ireland	1	0.07
Iceland	1	0.07
Developing Nations of East Asia and Pacific	122	8.76
Philippines	41	2.95
Thailand	40	2.87
China	23	1.65
Malaysia	9	0.65
Taiwan	6	0.43
Fiji	2	0.14
Indonesia	1	0.07
Developing Nations of Sub Saharan Africa	30	2.16
Ethiopia	16	1.15
Nigeria	5	0.36
Africa	4	0.29
Kenya	4	0.29
Ghana	1	0.07
Developing Nations of South Asia	28	2.01
Srilanka	12	0.86
Nepal	8	0.57
Bangladesh	3	0.22
Afghanistan	2	0.14
Pakistan	2	0.14
Bhutan	1	0.07
High-income Non-OECD Countries	26	1.87
Israel	18	1.29
Singapore	5	0.36
UAE	3	0.22
Developing Nations of Latin America and the Caribbean	13	0.93

Global geographical groups and Countries	Frequency	%
Mexico	11	0.79
Brazil	2	0.14
Developing Nations of Middle East and North Africa	8	0.57
Egypt	3	0.22
Syria	3	0.22
Iran	2	0.14
Developing Nations of Europe and Central Asia	8	0.57
Turkey	2	0.14
Romania	1	0.07
Russia	5	0.36
Total number of universities listed	1392	100

Table A.8.3: Approaches of foreign universities to establish commercial presence in India

Approach	Faculty						HOD						Total					
	Priority			Total	Weighted score*	Rank	Priority			Total	Weighted score*	Rank	Priority			Total	Weighted score*	Rank
	1	2	3				1	2	3				1	2	3			
A	504	562	135	1201	2771	2	140	183	37	360	823	2	644	745	172	1561	3594	2
B	583	499	116	1198	2863	1	209	123	21	353	894	1	792	622	137	1551	3757	1
C	144	122	908	1174	1584	3	30	33	270	333	426	3	174	155	1178	1507	2010	3

* Σ Priority1 X 3+Priority2 X 2+ Priority3 X 1

A: A joint program between a foreign university and AU at its present campus, where official representatives from abroad come to deliver part of their courses

B: A twinning program between a foreign university and AU at its campus, and students go to partner foreign university abroad for partial fulfillment of degree

C: Foreign University sets up a campus in India

Table A 10.1: Brainstorming outcome- total and average number of ideas generated

University	Issue1*		Issue2*		Issue3*		Issue4*		Issue5*	
	N	Average	N	Average	N	Average	N	Average	N	Average
ANGRAU	62	2.69	108	4.69	83	3.61	79	2.3	53	2.43
UPPDVU	57	1.9	95	3.17	75	2.5	73	2.43	30	1.00
CSK-HPKV	60	1.3	98	2.13	85	1.85	87	1.89	54	1.17
NDRI	87	2.64	144	4.36	114	3.45	108	3.27	90	2.73
CIFE	80	2.42	128	3.88	98	2.97	117	3.55	71	2.15
KVAFSU	100	1.85	170	3.15	153	2.83	161	2.98	145	2.69
OUAT	71	2.03	135	3.86	107	3.06	113	3.23	80	2.29
KAU	77	2.14	134	3.72	104	2.89	108	3	69	1.92
TOTAL	594	2.04	1012	3.49	819	2.82	846	2.92	592	2.04
University	Issue6*		Issue7*		Issue8*		Issue9*		Issue10*	
	N	Average	N	Average	N	Average	N	Average	N	Average
ANGRAU	56	2.43	80	3.48	85	3.69	48	2.09	64	2.78
UPPDVU	54	1.8	48	1.6	47	1.57	32	1.07	37	1.23
CSK-HPKV	66	1.43	62	1.35	57	1.24	62	1.35	54	1.17
NDRI	79	2.79	79	2.39	92	2.79	84	2.55	69	2.09
CIFE	88	2.67	107	3.24	93	2.82	86	2.61	78	2.36
KVAFSU	116	2.15	131	2.43	121	2.24	131	2.43	108	2
OUAT	84	2.4	93	2.43	92	2.63	77	2.2	93	2.66
KAU	76	2.11	88	2.44	79	2.19	79	2.19	76	2.11
TOTAL	619	2.13	688	2.37	666	2.3	599	2.07	579	2

*For description of the issues please see Box 10.1

Table A.10.2: Major sub-themes under the theme of marketing strategy to attract foreign students to AUs

S. N.	Marketing Strategy: sub-themes	% of ideas
1.	Informative website	29.24
2.	Publicity through newspaper /media	17.33
3.	Publicity through advertisements abroad	11.55
4.	Publicity through internet	10.47
5.	Projecting strengths of university (location, specialization etc)	8.30
6.	Market survey and networking	5.78
7.	Publicity through exhibition/seminars abroad	4.69
8.	Publicity through official representatives	3.61
9.	Publicity through opening of publicity centers/ off campus information centers/counseling cells	2.53
10.	Conducting educational fairs abroad	2.17
11.	Sending circulars to foreign universities	1.08
12.	Comprehensive information dissemination through ICAR	1.08
13.	Tie up with foreign universities	0.72
14.	Taking up consultancies abroad	0.36
15.	Projecting innovative ideas	0.36
16.	Hiring consultants abroad	0.36
17.	Earmarking seats for foreign students	0.36

Table A.10.3: Major sub-themes under the theme of strategic infrastructure development: to attract foreign students to AUs

S. N.	Strategic infrastructure development: sub-themes	% of ideas
1.	Good general infrastructure	42.25
2.	World class boarding/lodging	23.94
3.	Well equipped laboratories	9.86
4.	Teaching facilities (<i>class rooms, teaching aids etc</i>)	8.45
5.	Research facilities	4.93
6.	Library facilities	4.23
7.	World class games/sports/health care amenities	3.52
8.	Getting ISO-9001 certification	1.41
9.	Field facilities	1.41

Table A.10.4: Major sub-themes under the theme of strategy for education quality and standards to attract foreign students to AUs

S.N.	Strategy for education quality and standards: sub themes	% of ideas
1.	Designing special courses	29.46
2.	Demand-oriented courses	15.50
3.	International standards: Education methodologies	10.08
4.	Demand-oriented curriculum	8.53
5.	Timely upgrading and revision of curriculum	6.98
6.	Quality teaching	5.43
7.	Providing intensive practical training	5.43
8.	Harmonized international standards	5.43
9.	International accreditation	3.10
10.	Harmonized national curriculum	2.33
11.	Development of centre of excellence	2.33
12.	Designing globally recognized courses	2.33
13.	Use of international language for communication	0.78
14.	Ranking of Indian universities and colleges	0.78
15.	National accreditation: ICAR	0.78
16.	Harmonized national standards	0.78

Table A.10.5: Major sub-themes under the theme of Strategic linkages & collaborations to attract foreign students to AUs

S.N.	Strategic linkages & collaborations: sub themes	% of ideas
1.	Establishing branch campuses abroad	16.83
2.	Eliciting role of embassies/ consulates for linkages	14.85
3.	Mutual exchange of students	7.92
4.	Increasing publications in international journals	7.92
5.	Establishing counseling centers abroad	7.92
6.	Devising joint educational programs outside country	7.92
7.	Mutual exchange of faculty	5.94
8.	MoU for research projects	4.95
9.	Establishing foreign relation cell in universities	4.95
10.	Strengthening ICAR-SAU linkages	3.96
11.	Devising joint educational programs within country	3.96
12.	Taking up assignments of development of faculty other countries	2.97
13.	Eliciting role of Alumni	2.97
14.	Through international journals	1.98
15.	Establishing study centers abroad	1.98
16.	Conducting international workshops	1.98
17.	Eliciting role of NRIs	0.99

Table A.10.6: Major sub-themes under the theme of financial strategy to attract foreign students to AUs

S.N.	Financial strategy: sub themes	% of ideas
1.	Provide scholarships/ fellowships to foreign students	54.84
2.	Advantage of low cost education	17.20
3.	Assistantship to foreign students	13.98
4.	Separate fee structure for foreign students	6.45
5.	Provide loans for studies in India	4.30
6.	Incentives to foreign students	3.23

Table A.10.7: Major sub-themes under the theme of HRD strategy to attract foreign students to AUs

S.N.	HRD strategy: sub themes	% of ideas
1.	Faculty development for quality and international standard	25.00
2.	Appointment of competent faculty on merit criteria	25.00
3.	Regular up-gradation of skills through training/ refresher courses	13.89
4.	Improving faculty strength	9.72
5.	Deputation of faculty abroad	8.33
6.	Inviting foreigners for workshops	4.17
7.	Incentives for capable faculty	4.17
8.	Personality development	2.78
9.	Faculty pooling within country	2.78
10	Comprehensive evaluation of faculty	2.78
11	Providing technical expertise/ consultancies to commercial ventures abroad	1.39

Table A.10.8: Major sub-themes under the theme of strategic policy development to attract foreign students to AUs

S.N.	Strategic policy development: sub themes	% of ideas
1	Creating cordial and friendly environment	33.33
2	Increasing credibility of university	16.67
3	Easy visa norms	16.67
4	Amendment of government rules for facilitating smooth entry of foreign students	16.67
5	Proper advisory system	8.33
6	Identification of needy or target countries	8.33

Table A.10.9: Major sub-themes under the theme of student support services to attract foreign students to AUs

S.N.	Student support services: sub themes	% of ideas
1.	Simplified admission procedure	50.00
2.	Smooth flow of information	20.00
3.	International placement cell	20.00
4.	Work permit for limited hours	10.00

Table A.10.10: Major sub-themes under the theme of administrative & regulatory mechanisms to attract foreign students to AUs

S.N.	Administrative & regulatory mechanisms: sub themes	% of ideas
1.	Security of foreign nationals	40
2.	Liberalization of procedures	40
3.	Special privileges for developing nations	10
4.	Regulation at international level	10

Table A.10.11: Major sub-themes under the theme of strategic linkages & collaborations for establishment of commercial presence of AUs abroad

S.N.	Strategic linkages & collaborations: sub themes	% of ideas
1.	MoU for research projects	20.45
2.	Mutual exchange of faculty	14.39
3.	Devising joint educational programs outside country	11.36
4.	Establishing branch campuses abroad	10.61
5.	Eliciting role of Alumni	9.09
6.	Eliciting role of NRIs	5.68
7.	Mutual exchange of students	5.30
8.	Eliciting role of embassies/ consulates for linkages	5.30
9.	Establishing study centers abroad	3.79
10.	Strengthening ICAR-SAU linkages	3.03
11.	Conducting international workshops	3.03
12.	Devising joint educational programs within country	2.65
13.	Establishing counseling centers abroad	2.27
14.	Establishing foreign relation cell in universities	1.52
15.	Increasing publications in international journals	0.76
16.	Through international journals	0.38
17.	Taking up assignments of development of faculty other countries	0.38

Table A.10.12: Major sub-themes under the theme of marketing strategy for establishment of commercial presence of AUs abroad

S. N.	Marketing Strategy: sub themes	% of ideas
1.	Informative website	34.39
2.	Publicity through exhibition/seminars/education fares abroad	12.10
3.	Publicity through internet	10.19
4.	Publicity through advertisements abroad	9.55
5.	Publicity through newspaper /media	7.01
6.	Publicity through official representatives	6.37
7.	Projecting strengths of university (location, specialization etc)	4.46
8.	Publicity through opening of publicity centers/ off campus information centers/counseling cells	3.18
9.	Taking up consultancies abroad	2.55
10.	Market survey and networking	2.55
11.	Hiring consultants abroad	2.55
12.	Comprehensive information dissemination through ICAR	1.91
13.	Tie up with foreign universities	1.27
14.	Sending circulars to foreign universities	1.27
15.	Projecting innovative ideas	0.64

Table A.10.13: Major sub-themes under the theme of joint education delivery strategy for establishment of commercial presence of AUs abroad

S. N.	Joint educational delivery: sub-themes	% of ideas
1.	Joint degree programs	42.86
2.	Twining programs	25.00
3.	Distance education	19.64
4.	Contact programs	12.50

Table A.10.14: Major sub-themes under the theme of HRD strategy for establishment of commercial presence of AUs abroad

S. N.	HRD Strategy: sub-themes	% of ideas
1.	Regular up-gradation of skills through training/ refresher courses	16.28
2.	Deputation of faculty abroad	16.28
3.	Foreign universities create enough job opportunities for Indian students	11.63
4.	Appointment of competent faculty on merit criteria	11.63
5.	Inviting foreigners for workshops	9.30
6.	Incentives for capable faculty	9.30
7.	Faculty development for quality and international standard	9.30
8.	Providing technical expertise/ consultancies to commercial ventures abroad	6.98
9.	Developing salesman attitude	4.65
10.	Personality development	2.33
11.	Improving faculty strength	2.33

Table A.10.15: Major sub-themes under the theme of strategic policy development for establishment of commercial presence of AUs abroad

S. N.	Strategic policy development: sub-themes	% of ideas
1.	Amendment of government rules for facilitating smooth entry of foreign students	45.83
2.	Increasing credibility of university	16.67
3.	Creating cordial and friendly environment	12.50
4.	Taking up outsourcing assignments	8.33
5.	Simplified but effective quarantine procedures (animal sciences)	4.17
6.	Setting up of campuses of university in other states of India	4.17
7.	Proper advisory system	4.17
8.	Identification of needy or target countries	4.17

Table A.10.16: Major sub-themes under the theme of financial strategy for establishment of commercial presence of AUs abroad

S.N.	Financial Strategy: sub-themes	% of ideas
1.	Advantage of low cost education	38.46
2.	Separate fee structure for foreign students	23.08
3.	Provide scholarships/ fellowships to foreign students	15.38
4.	Provide loans for studies in India	7.69
5.	Incentives to foreign students	7.69
6.	Assistantship to foreign students	7.69

Table A.10.17: Major sub-themes under the theme of administrative & regulatory mechanisms for preparedness and regulatory requirements to face entry of foreign universities

S. N.	Administrative & regulatory mechanisms: sub-themes	% of ideas
1.	Registration/ accreditation/ regulation/ at national level	23.62
2.	Apex body for registration/ regulation/ licensing / monitoring	19.63
3.	Guidelines from ICAR	14.11
4.	Regulation through concerned ministry	9.51
5.	Recognition and accreditation of university in their own country	7.98
6.	Regulation at international level	7.06
7.	Amendment of regulatory Acts	6.44
8.	Liberalization of procedures	4.91
9.	Special privileges for developing nations	1.23
10.	Security of foreign nationals	1.23
11.	Faculty recruitment by foreign universities 50% positions for locals	1.23
12.	Education by foreign universities at par with local university	1.23
13.	Regular audit	0.61
14.	Performance based ranking of foreign universities	0.61
15.	Nature of university private or public	0.31
16.	Minimal political influence	0.31

Table A.10.18: Major sub-themes under the theme of strategy for education quality & standards for preparedness and regulatory requirements to face entry of foreign universities

S.N.	Strategy for education quality & standards: sub-themes	% of ideas
1.	International standards: education methodologies	15.15
2.	International accreditation	12.12
3.	Demand oriented curriculum	9.85
4.	National accreditation: ICAR	7.58
5.	Harmonized national standards	6.82
6.	Harmonized international standards	6.82
7.	Timely up-gradation and revision of curriculum	6.06
8.	Quality teaching	6.06
9.	Harmonized national curriculum	6.06
10.	Demand oriented courses	6.06
11.	Designing special courses	5.30
12.	International recognition of degree	3.03
13.	National accreditation: other than ICAR agencies	2.27
14.	Providing intensive practical training	1.52
15.	Development of center of excellence	1.52
16.	Designing globally recognized courses	1.52
17.	Use of international language for communication	0.76
18.	Ranking of Indian universities and colleges	0.76
19.	Enhancing student-teacher interaction	0.76

Table A.10.19: Major sub-themes under the theme of strategy for strategic infrastructure development for preparedness and regulatory requirements to face entry of foreign universities

S. N.	Strategic infrastructure development: sub-themes	% of ideas
1.	Good general infrastructure	60.87
2.	World class boarding/lodging	13.04
3.	Well equipped laboratories	13.04
4.	Teaching facilities (class rooms, teaching aids etc)	4.35
5.	Research facilities	2.17
6.	Recognition of labs by certification agencies	2.17
7.	Library facilities	2.17
8.	Getting ISO-9001 certification	2.17

Table A.10.20: Major sub-themes under the theme of strategy for strategic linkages & collaborations for preparedness and regulatory requirements to face entry of foreign universities

S. N.	Strategic linkages & collaborations: sub-themes	% of ideas
1.	MoU for research projects	60.61
2.	Mutual exchange of faculty	9.09
3.	Devising joint educational programs outside country	9.09
4.	Establishing foreign relation cell in universities	6.06
5.	Establishing study centers abroad	3.03
6.	Establishing counseling centers abroad	3.03
7.	Establishing branch campuses abroad	3.03
8.	Eliciting role of embassies/ consulates for linkages	3.03
9.	Conducting international workshops	3.03

Table A.10.21: Major sub-themes under the theme of strategy for HRD strategy for preparedness and regulatory requirements to face entry of foreign universities

S. N.	HRD Strategy: sub-themes	% of ideas
1.	Faculty development for quality and international standard	27.27
2.	Improving faculty strength	21.21
3.	Regular up-gradation of skills through training/ refresher courses	12.12
4.	Appointment of competent faculty on merit criteria	12.12
5.	Creation of enough job opportunities for Indian students by foreign universities	9.09
6.	No reservation for technical manpower *	6.06
7.	Faculty pooling within country	6.06
8.	Incentives for capable faculty	3.03
9.	Deputation of faculty abroad	3.03

*It is not the view of project team, it's the idea given by the respondents during brainstorming

Table A.10.22: Major sub-themes under the theme of strategy for financial strategy for preparedness and regulatory requirements to face entry of foreign universities

S. N.	Financial strategy: sub-themes	% of ideas
1.	Separate fee structure for foreign students	56.67
2.	Provide loans for studies in India	20.00
3.	Provide scholarships/ fellowships to foreign students	13.33
4.	Assistantship to foreign students	6.67
5.	Advantage of low cost education	3.33

Table A.10.23: Major sub-themes under the theme of strategic policy development for preparedness and regulatory requirements to face entry of foreign universities

S. N.	Strategic policy development: sub-themes	% of ideas
1.	Amendment of government rules for facilitating smooth entry of foreign students	66.67
2.	Simpler currency exchange mechanism	11.11
3.	Proper advisory system	11.11
4.	Easy visa norms	11.11

Table A.10.24: Major sub-themes under the theme of strategy for student support systems for preparedness and regulatory requirements to face entry of foreign universities

S. N.	Student support services: sub-themes	% of ideas
1.	Joint admission test like GRE/ TOEFL	33.33
2.	Common entrance examination	33.33
3.	Smooth flow of information	16.67
4.	Simplified admission procedure	16.67

Table A.11.1: Major sub-themes for diversity as strengths of India with respect to export of agriculture education

S.N.	Diversity in India: sub-themes	% of ideas
1.	Rich depository of livestock, wild animals, plants	46.92
2.	Diversified geographical, climatic, cropping systems available	42.18
3.	Specific aspects of Indian culture like homely treatment, service of others, yoga, meditation etc.	8.53
4.	Variety of foods	1.90
5.	Diversified culture	0.47

Table A.11.2: Major sub-themes for human resources as strengths of India with respect to export of agriculture education

S. N.	Human resources: sub-themes	% of ideas
1.	Available quality teachers	29.17
2.	World class expertise	20.83
3.	Availability of trained manpower	17.71
4.	Large number of manpower	15.63
5.	Hardworking & honest people	5.73
6.	English speaking faculty	3.65
7.	Training & exposure	3.13
8.	Motivation/Incentives	1.56
9.	Co operative work culture	1.56
10.	International exposure	0.52
11.	Employment opportunities	0.52

Table A.11.3: Major sub-themes for linkage and collaboration as strengths of India with respect to export of agriculture education

S.N.	Linkages & collaborations: sub-themes	% of ideas
1.	Faculty mobility	40.40
2.	Development of model campuses	25.25
3.	Student mobility	18.18
4.	Interaction with other countries	4.04
5.	Linkage with industry	2.02
6.	Cultural & social linkage	2.02
7.	Communication	2.02
8.	Allocation of seats to foreign students	2.02
9.	SAARC countries	1.01
10.	Needy/target countries	1.01
11.	MoUs	1.01
12.	Inter institutional mobility	1.01

Table A.11.4: Major sub-themes for university education systems as strengths of India with respect to export of agriculture education

S. N.	University education systems: sub-themes	% of ideas
1.	English as a medium of instruction	26.76
2.	Inbuilt research system	15.49
3.	Large network of cultural universities	9.86
4.	Practical in course curriculum	7.04
5.	Availability of variety of courses	7.04
6.	Need based courses	5.63
7.	National standards	5.63
8.	Government regulations	4.23
9.	Curriculum of international standard	4.23
10.	Quality teaching	2.82
11.	Distance education	2.82
12.	Competency in selected areas	2.82
13.	Periodic syllabus up gradation	1.41
14.	Online education (e- learning)	1.41
15.	Joint venture with foreign universities	1.41
16.	Guru-sishya education system	1.41

Table A.11.5: Major sub-themes for infrastructure as strengths of India with respect to export of agriculture education

S. N.	Infrastructure: sub-themes	% of ideas
1.	Good infrastructure & living conditions	65.31
2.	Professionally useful facilities	32.65
3.	Good basic amenities	2.04

Table A.11.6: Major sub-themes for economic and financial matters as strengths of India with respect to export of agriculture education

S. N.	Economic & financial matters: sub-themes	% of ideas
1.	Low cost of education	77.14
2.	Low cost of living	8.57
3.	Availability of funds	8.57
4.	Low fee structure	5.71

Table A.11.7: Major sub-themes for institutional and core issues as strengths of India with respect to export of agriculture education

S. N.	Institutional and core issues: sub-themes	% of ideas
1.	Niche area: Dairy/sheep/goat/poultry/plant breeding/ hybrid seed production/ dry-land farming	38.72
2.	Identification of niche area	22.58
3.	Existing NARS	12.90
4.	Potential commodities/ traditional products	12.90
5.	Democratic relation with outside world	6.45
6.	Centers of excellence	6.45

Table A.11.8: Major sub-themes for human resources as weakness of India with respect to export of agriculture education

S. N.	Human resources: sub-themes	% of ideas
1.	Less number of manpower	18.63
2.	Non conducive work culture	12.42
3.	Lack of training & exposure	11.18
4.	Lack of motivation / incentives	11.18
5.	Less trained manpower	9.32
6.	Lack of quality teachers	7.45
7.	More professional jealousy	6.21
8.	No recognition of talent	4.35
9.	Low accountability	4.35
10.	Lack of hardworking & honest people	4.35
11.	Lack of employment opportunities	3.73
12.	Lack of international exposure	2.48
13.	Lack of world class expertise	1.24
14.	Lack of English speaking faculty	1.24
15.	Non implementation of selection on merit criteria	0.62
16.	Lack of exploration of talent	0.62
17.	Absence of placement cell	0.62

Table A.11.9: Major sub-themes for weaknesses of India with respect to export of agriculture education

S.N.	System weaknesses: sub-themes	% of ideas
1.	Red tapism & corruption	16.46
2.	Political interference	14.56
3.	Supremacy given to bureaucrats	13.92
4.	Institutional weaknesses-lack of fool proof evaluation system, academic/research achievements are not highlighted through websites, no rigid standards, lengthy procedures etc	13.92
5.	Management constraints	12.66
6.	Lack of proper regulations	10.13
7.	Castism, religion, region feelings etc	5.70
8.	Inability of AUs to face specific threats-theft of resources, Competition, Infiltration of undesirable western culture, Brain drain, Faculty shift to foreign universities	4.43
9.	Inadequate publicity	3.16
10.	Lack of websites	2.53
11.	Projecting India into poor light	1.27
12.	Multiple regulatory bodies for agric. education	1.27

Table A.11.10: Major sub-themes for infrastructure as weakness of India with respect to export of agriculture education

S.N.	Infrastructure: sub-themes	% of ideas
1.	Poor infrastructure & living conditions	68.31
2.	Professionally useful facilities insufficient	23.94
3.	Poor basic amenities-games, hygienic & sanitary conditions, irregular power availability	7.04
4.	Poor maintenance	0.70

Table A.11.11: Major sub-themes for university education system as weakness of India with respect to export of agriculture education

S. N.	University education system: sub-themes	% of ideas
1.	Lack of practicality in course curriculum	21.52
2.	Improper research system	18.99
3.	Lack of quality teaching	10.13
4.	No curriculum of international standard	7.59
5.	Too much govt. regulations	7.59
6.	No periodic syllabus up gradation	6.33
7.	Low national standards	5.06
8.	Only mediocre prefer agric. higher education	3.80
9.	Lack of need based courses	3.80
10.	No variety of courses	2.53
11.	Lack of proper monitoring system	2.53
12.	Lack of professional approach	2.53
13.	Lack of competitive spirit	2.53
14.	Lack of accreditation	2.53
15.	Non availability of English as a medium of instruction	1.27
16.	Large network of agric. universities	1.27

Table A.11.12: Major sub-themes for linkages and collaboration as weakness of India with respect to export of agriculture education

S.N.	Linkages & collaborations: sub-themes	% of ideas
1.	Poor interaction between AUs	38.00
2.	Less support from government	12.00
3.	Less opportunity of faculty mobility	12.00
4.	Lack of student exchange	10.00
5.	Less interaction with other countries	8.00
6.	Less collaborative projects and MoUs	6.00
7.	Lack of model campuses	6.00
8.	Workshop/seminar	2.00
9.	Poor linkage with industry	2.00
10.	Non utilization of alumni	2.00
11.	Lack of franchises	2.00

Table A.11.13: Major sub-themes for diversity as weakness of India with respect to export of agriculture education

S. N.	Diversity in India: sub-themes	% of ideas
1.	Foreign student may not cope up with varied diversity-geographical, climatic, and cultural.	80.00
2.	Depletion of rich depository of livestock, wild animals, plants	20.00

Table A.11.14: Major sub-themes for institutional and core issues as weakness of India with respect to export of agriculture education

S. N.	Institutional and core issues: sub-themes	% of ideas
1.	Less effective NARS*	50.00
2.	Lack of centers of excellence	33.33
3.	No identification of niche area	16.67

* Its not opinion of the project team, respondents recorded this during brainstorming

Table A.11.15: Major sub-themes for linkages and collaborations as opportunity for India with respect to export of agriculture education

S. N.	Linkages & collaborations: sub-themes	% of ideas
1.	Faculty exchange	21.43
2.	Inter institutional mobility	10.99
3.	Student exchange	9.34
4.	Better interaction with other countries	8.79
5.	Available alumni in other countries	8.79
6.	Better linkage with industry	7.14
7.	International MoUs & Projects	6.59
8.	Greater interaction between SAARC countries	6.59
9.	Development of model campuses	6.04
10.	Educational support to needy/target countries	4.95
11.	Platform for International workshop/seminar	3.30
12.	Enhanced cultural & social linkage	2.75
13.	Tapping the potential of semi arid region countries	1.65
14.	Respect to democratic values	0.55
15.	Changed Govt. attitude towards policy support	0.55
16.	Allocation of seats to foreign students	0.55

Table A.11.16: Major sub-themes for diversity in India as opportunity for India with respect to export of agriculture education

S. N.	Diversity in India: sub-themes	% of ideas
1.	Tapping the diversified geographical and climatic situations, and available cropping systems.	47.78
2.	Utilization of rich depository of livestock, wild animals, plants	39.44
3.	Tapping the various aspects of Indian culture like homely treatment, service of others, yoga, meditation, diversified culture, variety of foods etc.	12.78

Table A.11.17: Major sub-themes for human resources in India as opportunity for India with respect to export of agriculture education

S. N.	Human resources: sub-themes	% of ideas
1.	Available trained manpower	27.17
2.	Manpower strength	20.65
3.	Quality teachers	14.13
4.	More employment opportunities	9.78
5.	Chance of international exposure	5.43
6.	Motivation/Incentives	4.35
7.	World class expertise	3.26
8.	Improved work culture	3.26
9.	Hardworking & honest people	3.26
10.	English speaking faculty	3.26
11.	Recognition of talent	2.17
12.	Enhanced accountability	2.17
13.	Available cheap labour	1.09

Table A.11.18: Major sub-themes for university education systems as opportunity for India with respect to export of agriculture education

S. N.	University education systems: sub-themes	% of ideas
1.	Large network of AUs available	21.00
2.	Strengthening research system	15.79
3.	English as a medium of instruction	15.79
4.	More joint ventures and twinning programmes	12.28
5.	Compatible Government regulations	10.53
6.	Development of competency in selected areas	8.77
7.	Strengthening online education (e- learning)	7.02
8.	Integration of professional approach	3.51
9.	Improvement in national standards	3.51
10.	Enhancing practical content in course curriculum	3.51
11.	Development of need based courses	3.51
12.	Conformation to international standards	3.51
13.	Quality teaching	1.75

Table A.11.19: Major sub-themes for institutional and core issues as opportunity for India with respect to export of agriculture education

S. N.	Institutional and core issues: sub-themes	% of ideas
1.	Niche area dairy/sheep/goat/poultry/medicinal & aromatic plants/Indian traditional products	55.26
2.	Identification of niche area and potential in various commodities	21.05
3.	Strengthening NARS	13.16
4.	Involving available cooperatives	10.53

Table A.11.20: Major sub-themes for infrastructure as opportunity for India with respect to export of agriculture education

S. N.	Infrastructure: sub-themes	% of ideas
1.	Development of better Infrastructure & living conditions	64.00
2.	Development of better professionally useful facilities	28.00
3.	Development of better games facilities	8.00

Table A.11.21: Major sub-themes for economic and financial matters as opportunity for India with respect to export of agriculture education

S. N.	Economic & financial matters: sub-themes	% of ideas
1.	Low Cost of living	32.00
2.	Enhanced availability of funds	32.00
3.	Low Cost of education	28.00
4.	Low fee structure	8.00

Table A.11.22: Major sub-themes for system threats for India with respect to export of agriculture education

S.N.	System threats: sub-themes	% of ideas
1.	Brain drain (faculty shift) -to foreign university campuses in India and abroad	30.26
2.	Tough competition in unequal situation	13.08
3.	Infiltration of undesirable elements of western culture	11.28
4.	National security	6.15
5.	Less attention towards IPRs	5.38
6.	Lack of regulatory mechanism to maintain education standards by Indian and foreign universities	4.87
7.	Locals may not be preferred by foreign universities jobs	4.36
8.	Student shift to foreign universities campus in India	4.10
9.	Introduction and spread of new diseases and pests	2.82
10.	Prevailing social and institutional weaknesses such as - Management constraints; red tapism & corruption; Political interference; castism, religion, region feelings; Projection of India into poor light	1.79
11.	No threat	1.79
12.	Dominance of foreign students	1.54
13.	Neglect of national students	1.28
14.	Foreign student may not cope up with Indian conditions	1.03
15.	Lack of international accreditation system	0.51
16.	Good infrastructure of foreign universities abroad would help them under mode 2 & 3	0.51
17.	Difficulty in establishment of campuses abroad	0.51

Table A.11.23: Major sub-themes of threats for diversity in India with respect to export of agriculture education

S.N.	Diversity in India: sub-themes	% of ideas
1.	Take away of research material, knowledge, ideas and resources - plant and animal genetic resources, Indian traditional products and knowledge	93.48
2.	Unforeseen changes in environmental, geographical, climatic situations and cropping systems	6.52

Table A.11.24: Major sub-themes of threats for university education system in India with respect to export of agriculture education

S.N.	University education systems: sub-themes	% of ideas
1.	Varied regulations from state governments	34.62
2.	Non profit oriented public commitments of NARS	15.38
3.	Irregularity in periodic syllabus up gradation	7.69
4.	Inadequate publicity	7.69
5.	English as a medium of instruction may be discouraging for students of rural set up	7.69
6.	Curriculum of not international standard	7.69
7.	Competency in areas of little international significance	7.69
8.	Only mediocre prefer agric. higher education	3.85
9.	Large network of AUs may be unmanageable	3.85
10.	Absence of effective monitoring system	3.85

Table A.11.25: Major sub-themes of threats for institutional and core issues in India with respect to export of agriculture education

S.N.	Institutional and core issues: sub-themes	% of ideas
1.	A change in relationship of NARS	83.33
2.	Shift in democratic relation with outside world	8.33
3.	Diversion of attention from areas contributing to sustainable agriculture	4.17
4.	Absence of database on agricultural research	4.17

Table A.11.26: Major sub-themes of threats for economic and financial matters in India with respect to export of agriculture education

S.N.	Economic & financial matters: sub-themes	% of ideas
1.	Shortage of funds to unprivileged sectors	55.56
2.	Low cost of education may not be competitive on account of less cost of tuition and living	44.44

Table A.11.27: Major sub-themes of threats for human resources in India with respect to export of agriculture education

S.N.	Human resources: sub-themes	% of ideas
1.	Paucity of trained manpower	38.46
2.	Insufficient motivation / incentives	23.08
3.	Professional jealousy and irresponsible work culture	15.38
4.	Faulty selection procedure	15.38
5.	Constraints in getting cheap labour	7.69

Table A.11.28: Major sub-themes of threats for infrastructure in AUs with respect to export of agriculture education

S.N.	Infrastructure in AUs: sub-themes	% of ideas
1.	Poor availability of infrastructure - living conditions, professionally useful facilities	90.91
2.	Poor hygienic & sanitary conditions	9.09

Table A.11.29: Major sub-themes of threats for linkage and collaboration in AUs with respect to export of agriculture education

S.N.	Linkages & collaborations in AUs: sub-themes	% of ideas
1.	Existing poor linkages with industry	40.00
2.	Existing government attitude & support	40.00
3.	Non availability of model campuses	20.00

Table A.12.1: Student strength in AUs during 2005

S. N.	University	Student strength in degree programmes			
		UG	PG	PhD	Total
1	ANGRAU	3101	438	82	3621
2	HAU	798	524	339	1661
3	RAU	517	228	64	809
4	CAU	187	21	-	208
5	IVRI	-	176	211	387
6	MPUAT	1400	216	111	1727
7	NDUAT	236	309	126	671
8	GBPUAT	2379	524	239	3142
9	Dr.BSKKV	936	85	21	1042
10	CIFE	-	90	54	144
11	CSAUAT	1471	406	190	2067
12	MPKV	540	225	34	799
13	Dr.PDKV	912	222	20	1154
14	AAU	836	217	157	1210
15	OUAT	1784	508	25	2317
16	BCKV	561	366	197	1124
17	CSKHPKV	565	151	62	778
18	GAU (J)	434	160	76	670
19	KAU	1720	290	100	2110
20	MAU	1848	364	87	2299
21	PAU	1127	810	217	2154
	Total	21352	6330	2412	30094

Table A.12.2: University and category wise sanctioned and filled posts of teachers in AUs

S.N.	University	Assistant Professor			Associate Professor			Professor			Total Sanctioned		
		Sancti oned	Filled	% Filled	Sancti oned	Filled	% Filled	Sancti oned	Filled	% Filled	Sancti oned	Filled	% Filled
1	ANGRAU	1312	699	53.3	374	367	98.1	110	173	157.3	1796	1239	69.0
2	HAU	908	144	15.9	241	317	131.5	65	456	701.5	1214	917	75.5
3	RAU	736	260	35.3	264	114	43.2	82	20	24.4	1082	394	36.4
4	CAU	145	82	56.6	63	16	25.4	37	10	27.0	245	108	44.1
5	IVRI	172	27	15.7	31	-	-	-	31	-	-	230	-
6	MPUAT	384	277	72.1	131	100	76.3	32	13	40.6	547	390	71.3
7	NDUAT	352	253	71.9	125	120	96.0	31	28	90.3	508	401	78.9
8	GBPUAT	-	129	-	-	169	-	-	156	-	-	454	-
9	Dr.BSKKV	194	170	87.6	84	68	81.0	31	25	80.6	309	263	85.1
10	CIFE	60	37	61.7	20	10	50.0	10	8	80.0	90	55	61.1
11	CSAUAT	282	238	84.4	107	65	60.7	29	16	55.2	418	319	76.3
12	MPKV	22	17	77.3	25	25	100.0	19	13	68.4	66	55	83.3
13	Dr.PDKV	-	156	-	-	113	-	-	40	-	-	309	-
14	AMU	544	544	100.0	457	411	89.9	319	276	86.5	1320	1231	93.3
15	AAU	136	75	55.1	83	64	77.1	38	20	52.6	257	159	61.9
16	OUAT	33	8	24.2	55	38	69.1	165	134	81.2	253	180	71.1
17	BCKV	-	84	-	-	77	-	0	121	-	-	282	-
18	CSKHPKV	265	127	47.9	145	110	75.9	138	120	87.0	548	357	65.1
19	GAU(J)	69	52	75.4	35	23	65.7	24	17	70.8	128	92	71.9
20	KAU	-	19	-	-	361	-	0	112	-	-	492	-
21	MAU	271	-	-	135	-	-	38	-	-	444	-	-
22	PAU	765	409	53.5	464	333	71.8	459	383	83.4	1688	1125	66.6
	Total	6650	3807	57.2	2839	2901	102.2	1168	1789	153.2	10913	9052	82.9

Table A.12.3: University and category wise STR of sanctioned posts in AUs

S. N.	University	Student strength	Assistant Professor		Associate Professor		Professor		Total faculty	
			N	Ratio	N	Ratio	N	Ratio	N	Ratio
1	ANGRAU	3621	1312	2.8	374	9.7	110	32.9	1796	2.0
2	HAU	1661	908	1.8	241	6.9	65	25.6	1214	1.4
3	RAU	809	736	1.1	264	3.1	82	9.9	1082	0.7
4	CAU	208	145	1.4	63	3.3	37	5.6	245	0.8
5	IVRI	387	172	2.3	31	12.5	-	-	203	1.9
6	MPUAT	1727	384	4.5	131	13.2	32	54.0	547	3.2
7	NDUAT	671	352	1.9	125	5.4	31	21.6	508	1.3
8	GBPUAT	3142	-	-	-	-	-	-	-	-
9	Dr.BSKKV	1042	194	5.4	84	12.4	31	33.6	309	3.4
10	CIFE	144	60	2.4	20	7.2	10	14.4	90	1.6
11	CSAUAT	2067	282	7.3	107	19.3	29	71.3	418	4.9
12	MPKV	799	22	36.3	25	32.0	19	42.1	66	12.1
13	Dr.PDKV	1154	-	-	-	-	-	-	-	-
14	AMU	12149	544	22.3	457	26.6	319	38.1	1320	9.2
15	AAU	1210	136	8.9	83	14.6	38	31.8	257	4.7
16	OUAT	2317	33	70.2	55	42.1	165	14.0	253	9.2
17	BCKV	1124	-	-	-	-	-	-	-	-
18	CSKHPKV	778	265	2.9	145	5.4	138	5.6	548	1.4
19	GAU (J)	670	69	9.7	35	19.1	24	27.9	128	5.2
20	KAU	2110	-	-	-	-	-	-	-	-
21	MAU	2299	271	8.5	135	17.0	38	60.5	444	5.2
22	PAU	2154	765	2.8	464	4.6	459	4.7	1688	1.3
	Total	42243	6650	6.4	2839	14.9	1627	26.0	11116	3.8

Table A.12.4: University and category wise STR of filled-in posts in AUs

S.N.	University	Student strength	Assistant Professor		Associate Professor		Professor		Total Faculty	
			No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio
1	ANGRAU	3621	699	5.2	367	9.9	173	20.9	1239	2.9
2	HAU	1661	144	11.5	317	5.2	456	3.6	917	1.8
3	RAU	809	260	3.1	114	7.1	20	40.5	394	2.1
4	CAU	208	82	2.5	16	13.0	10	20.8	108	1.9
5	IVRI	387	27	14.3	-	-	-	-	27	14.3
6	MPUAT	1727	277	6.2	100	17.3	13	132.8	390	4.4
7	NDUAT	671	253	2.7	120	5.6	28	24.0	401	1.7
8	GBPUAT	3142	129	24.4	169	18.6	156	20.1	454	6.9
9	Dr.BSKKV	1042	170	6.1	68	15.3	25	41.7	263	4.0
10	CIFE	144	37	3.9	10	14.4	8	18.0	55	2.6
11	CSAUAT	2067	238	8.7	65	31.8	16	129.2	319	6.5
12	MPKV	799	17	47.0	25	32.0	13	61.5	55	14.5
13	Dr.PDKV	1154	156	7.4	113	10.2	140	8.2	409	2.8
14	AMU	12149	544	22.3	411	29.6	276	44.0	1231	9.9
15	AAU	1210	75	16.1	64	18.9	20	60.5	159	7.6
16	OUAT	2317	8	289.6	38	61.0	134	17.3	180	12.9
17	BCKV	1124	84	13.4	77	14.6	121	9.3	282	4.0
18	CSKHPKV	778	127	6.1	110	7.1	120	6.5	357	2.2
19	GAU (J)	670	52	12.9	23	29.1	17	39.4	92	7.3
20	KAU	2110	19	111.1	361	5.8	112	18.8	492	4.3
21	PAU	2154	409	5.3	333	6.5	383	5.6	1125	1.9
	Total	42243	3807	11.1	2901	14.6	2241	18.9	8949	4.7

Table A.12.5: University wise annual (total and average) salary component of AUs

S. N.	University	Annual salary component (Rs)		
		Teaching Staff	Non Teaching Staff	Total Staff
1.	ANGRAU	520000000	400000000	920000000
2.	HAU	-	-	853963000
3.	RAU	-	-	411358000
4.	CAU	302700000	25138000	327838000
5.	MPUAT	-	-	298700000
6.	NDUAT	-	-	132606000
7.	GBPUAT	-	-	362197000
8.	Dr.BSKKV	98000000	129600000	227600000
9.	CIFE	13104000	25464000	38568000
10.	CSAUAT	104083000	28833000	132916000
11.	MPKV	18733000	1255000	19988000
12.	AMU	564600000	725040000	1289640000
13.	AAU	-	-	44500000
14.	OUAT	-	-	356188000
15.	BCKV	69985000	173257000	243242000
16.	CSKHPKV	150032000	235522000	385554000
17.	GAU (J)	25360000	350740000	376100000
18.	KAU	209356200	326413700	535769900
19.	MAU	142012000	208959000	350971000
20.	PAU	-	-	1556936000
	Total	2217965200	2630221700	8864634900
	Average*	184830433	219185142	443231745

* Only 12 AUs have given the bifurcation of teaching and non-teaching

Table A.12.6: *University wise annual receipts from student fee and its equivalence to staff salaries

S. N.	University	Salary (Rs)			Fees receipt (Rs)	% Contribution of fees to salary		
		Teaching Staff	Non Teaching Staff	Total salary		Teaching Staff	Non Teaching Staff	Total salary
1	ANGRAU	520000000	400000000	920000000	23000000	4.42	5.75	2.50
2	HAU	-	-	853963000	-	-	-	-
3	RAU	-	-	411358000	-	-	-	-
4	CAU	302700000	25138000	327838000	632000	0.21	2.51	0.19
5	MPUAT	-	-	298700000	-	-	-	-
6	NDUAT	-	-	132606000	-	-	-	-
7	GBPUAT	-	-	362197000	-	-	-	-
8	Dr.BSKKV	98000000	129600000	227600000	2589000	2.64	2.00	1.14
9	CIFE	13104000	25464000	38568000	913500	6.97	3.59	2.37
10	CSAUAT	104083000	28833000	132916000	15000000	14.41	52.02	11.29
11	MPKV	18733000	#1255000	19988000	4000000	21.35	318.73#	20.01
12	AMU	564600000	725040000	1289640000	39500635	7.00	5.45	3.06
13	AAU	-	-	44500000	-	-	-	-
14	OUAT	-	-	356188000	-	-	-	-
15	BCKV	69985000	173257000	243242000	2427545	3.47	1.40	1.00
16	CSKHPKV	150032000	235522000	385554000	9103635	6.07	3.87	2.36
17	GAU (J)	25360000	350740000	376100000	3277412	12.92	0.93	0.87
18	KAU	209356200	326413700	535769900	6615900	3.16	2.03	1.23
19	MAU	142012000	208959000	350971000	8238300	5.80	3.94	2.35
20	PAU	-	-	1556936000	-	-	-	-
	Total	2217965200	2630221700	8864634900	115297927	-	-	-
	Average	184830433	219185142	443231745	9608161	7.59	7.37	4.03

*Analysis is based on data provided by the nodal officers, only 12 AUs have given the complete information relevant to this table therefore contribution towards fees is calculated for 12 AUs only
 #The figure given by the nodal officer need to be checked and not taken into calculations

Table A.12.7: University wise annual receipts from student fee and its equivalence towards teaching time.

S.N.	University	(1) Teachers responded in questionnaires survey	(2) Average salary (Rs)	(3) Average time (%) spent on teaching activity	(4)=(3*2) Salary spent on teaching activity (Rs)	(5) Total strength of available teachers	(6)=(4*5)* 12. Annual salary for teaching activity (Rs)	(7) #Receipts from students fees (Rs)	(8)=(7)/(6)* 100 Equivalence of fees to salary on teaching activity
1	ANGRAU	72	16167	61	9867	1239	146702160	23000000	15.68
2	CAU	21	13352	54	7248	108	9393972	632000	6.73
3	Dr.BSKKV	49	18298	51	9315	263	29397264	2589000	8.81
4	CIFE	27	13314	45	5965	55	3936672	913500	23.20
5	CSAUAT	43	14934	60	9031	319	34572192	15000000	43.39
6	MPKV	58	19313	43	8353	65	6515196	4000000	61.39
7	AMU	20	15489	57	8829	1231	130420104	39500635	30.29
8	BCKV	21	16292	55	8879	282	30047712	2427545	8.08
9	CSKHPKV	18	19293	43	8228	357	35247900	9103635	25.83
10	GAU (J)	65	18792	36	6817	92	7526412	3277412	43.55
11	KAU	68	21742	40	8757	492	51701688	6615900	12.80
Average			16999	50	8299	409	44132844	9732693	22.05

Note: #- The student fee given in column (7) includes tuition fee and other charges. If tuition fee is approximately 30% of the total student fee then it meets out approximately 6.7% of the basic salary amount spent on teaching time.

- (1) In total 462 faculty members provided the complete and relevant information about their basic pay and time spent on various activities for the purpose of calculation of teaching time and amount of basic salary spent for this
- (2) Average of basic salary of the teachers of the corresponding university as provided by them in the filled-in questionnaires
- (3) Average of percent of time spent by teachers of the corresponding university on teaching activity as provided by them in the filled-in questionnaires
- (4) Annual salary spent on teaching activity calculated by project team on the basis of information provided by the teachers in the filled-in questionnaire
- (5) & (7) Total strength of available teachers and annual fees received from students as provided by the nodal officers of the corresponding university

Table A.12.8: Percent time spent by Heads on various activities in AUs, their monthly basic salaries and distribution of salaries to these activities

Designation	A	B	C	D	E	F	G	H	I	J	K	L
Head, Chairman (SAU)	263	69.58	5112950	19441	41.95	2144912	30.07	1537384	11.15	570201	14.70	751779
Head (ICAR)	17	4.50	343170	20186	30.88	105979	42.65	146352	6.18	21196	20.29	69643
Dean, Principal, Director, DE	38	10.05	776480	20434	23.24	180429	18.47	143444	11.53	89500	43.03	334091
Associate Dean	13	3.44	265800	20446	31.08	82602	22.77	60521	15.00	39870	30.38	80762
Principal Scientist/Professor	47	12.43	913150	19429	47.98	438118	28.94	264231	9.89	90344	12.13	110744
	378	100	7411550	19987	35.03	2595901	28.58	2118141	10.75	796719	24.11	1786719

Table A.12.9: Percent time spent by Heads on various activities in AUs, their monthly basic salaries and distribution of salaries to these activities

Designation	A	B	C	D	E	F	G	H	I	J	K	L
Assistant Professor	484	37.40	6711171	13866	50.52	3390540	30.59	2052640	11.77	789961	6.71	450068
Associate Professor	571	44.13	8690825	15220	49.92	4338263	32.33	2809504	10.93	950112	6.66	579124
Professor	239	18.47	4013340	16792	46.03	1847312	37.43	1502064	9.03	362544	7.31	293360
Total	1294	100	19415336	15004	48.82	9479075	33.45	6493746	10.58	2053927	6.89	1338331

Note:

A: Number of respondents

B: % of strength

C: Total Salary

D: Average Salary

E: % of time spent on Teaching

F: Amount of salary spent for Teaching (Rs)

G: % of time spent on Research

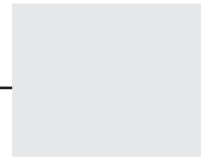
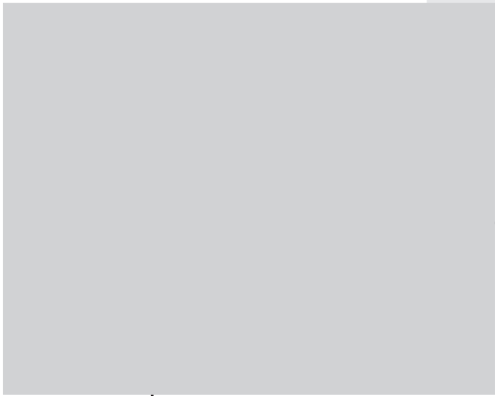
H: Amount of salary spent for Research (Rs)

I: % of time on Extension

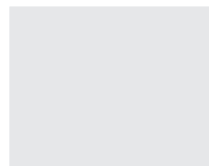
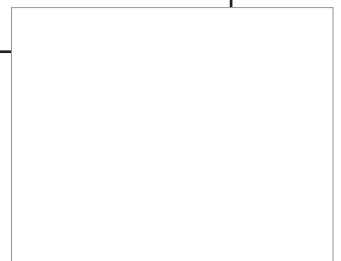
J: Amount of salary spent for Extension (Rs)

K: % of time on other activities

L: Amount of salary spent for other activities (Rs)



Annexures



Annex 3.1: List of Nodal Officers in various AUs

S.N.	University	Name & Address of Nodal Officer
1.	Acharya N G Ranga Agricultural University (ANGRAU) Hyderabad	Dr Suhasini K. Senior Scientist (Agricultural Economics) College of Agriculture Acharya N G Ranga Agricultural University (ANGRAU), Rajendranagar, Hyderabad Andhra Pradesh – 500030
2.	Gujarat Agricultural University (A) Anand	Dr G.N. Patel Professor and Head Department of Agricultural Economics B.A. College of Agriculture Anand Agricultural University ANAND, Gujarat-388110
3.	Bidhan Chandra Krishi Vishwa Vidyalaya Mohanpur	Dr P.K. Chakraborty Professor Department of Agricultural Meteorology & Physics Bidhan Chandra Krishi Vishwa Vidyalaya Faculty of Agriculture P.O. Krishi Vishwavidyalaya Mohanpur, Dist. Nadia West Bengal-741252
4.	Birsa Agricultural University Ranchi	Dr K. Jha Dy. Registrar (Exam.) Birsa Agricultural University Kanke, Ranchi, Jharkhand-834006
5.	C. S. Azad University of Agriculture and Technology Kanpur	Dr Udit Narain Associate Professor Department of Plant Pathology C. S. Azad University of Agriculture and Technology Kanpur, Uttar Pradesh-208002
6.	Ch Charan Singh Haryana Agricultural University (HAU) Hisar	Dr R.K. Grover Joint Director Directorate of Human Resource Management Ch Charan Singh Haryana Agricultural University (HAU), Hisar, Haryana- 125004
7.	Ch. Sarwan Kumar Himachal Pradesh Krishi Vishwa Vidyalaya Palampur	Dr G.L. Bansal Head, Department of Plant Physiology College of Basic Sciences CSK HPKV, Palampur Himachal Pradesh-176062
8.	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth Dapoli	Dr J.M. Talathi Associate Professor Department of Agril. Economics College of Agriculture Dapoli, Dist. Ratnagiri Maharashtra-415712
9.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth (PDKV) Akola	Dr E.R. Patil Head Department of Agricultural Economics and Statistics Dr. Panjabrao Deshmukh Krishi Vidyapeeth (PDKV) Krish Nagar, Akola Maharashtra – 444104

S.N.	University	Name & Address of Nodal Officer
10.	Govind Ballabh Pant University of Agriculture and Technology Pantnagar	Dr H.S. Chawla Professor Plant Biotechnology & Nodal Officer Patent Information Centre Department of Genetics and Plant Breeding, College of Agriculture G.B.P.U.A T, Pantnagar Uttaranchal-263145
11.	Indira Gandhi Agricultural university Raipur	Dr N. Motiramani Principal scientist (Pl. Breeding & Genetics) College of Agriculture Indira Gandhi Agricultural university Raipur, Chattisgarh-492012
12.	Jawaharlal Nehru Krishi Vishwa Vidyalaya Jabalpur	Dr N.G. Mitra Dy. Director Instruction Directorate of Instruction Jawaharlal Nehru Krishi Vishwa Vidyalaya Krishinagar, Adhartal Jabalpur, Madhya Pradesh-482004
13.	Gujrat Agricultural University (J) Junagarh	Dr K.A. Khunt Professor Department of Agricultural Economics Junagarh Agricultural University Junagarh, Gujarat-362001
14.	Karnataka Veterinary, Animal and Fisheries Sciences University Bidar	Dr Y. Hari Babu Professor and Head i/c Department of Veterinary Microbiology Veterinary College, KVAFSU, Nandinagar, PB No.6 Bidar, Karnataka State-585401
15.	Kerala Agricultural University Thrissur	Dr M. Achuthan Nair Director (Academic & P.G.studies) Kerala Agricultural University (KAU) Thrissur, Kerala- 680656
16.	Maharana Pratap University of Agriculture and Technology Udaipur	Dr K.A. Varghese Officer In charge, CCPC Scheme and Assoc. Prof., Deptt. Of Agril. Statistics Maharana Pratap Unjverstiy of Agriculture and Technology, RCA Campus, Udaipur, Rajasthan-313001
17.	Mahatma Phule Krishi Vidyapeeth Rahuri	Dr R.K. Rahane Associate Professor of Agricultural Economics College of Agriculture Mahatma Phule Krishi Vidyapeeth Pune, Maharashtra-400005
18.	Marathwada Agricultural University Parbhani	Dr S.P. Kalyankar Professor Department of Agricultural Economics Marathwada Agricultural University Parbhani, Maharashtra-431402

S.N.	University	Name & Address of Nodal Officer
19.	Narendra Dev University of Agriculture and Technology Faizabad	Dr J.L. Dwivedi Prof. Plant Breeding & Nodal - Officer, IPR Crop Research Station (NDUAT) Masodha, P.O. Dabhasemar Faizabad-224133, Uttar Pradesh
20.	Orissa University Of Agriculture & Technology (OUAT) Bhubaneswar	Dr H.N. Atibudhi Professor Department of Agricultural Economics Orissa University Of Agriculture & Technology (OUAT), Bhubaneswar, Orissa- 751003
21.	Punjab Agricultural University Ludhiana	Dr Sukhpal Singh Agricultural Economist Department of Economics Punjab Agricultural University Ludhiana, Punjab-141004
22.	Rajasthan Agricultural University (RAU) Bikaner	Dr Anil Kumar Professor of Agricultural Economics & Dean Post Graduate Studies Rajasthan Agricultural University (RAU) Bikaner, Rajasthan- 334002
23.	Rajendra Agricultural university Samastipur	Dr D.K. Sinha Associate Professor- Agricultural Economics Rajendra Agricultural university Pusa, Samastipur Bihar-848125
24.	Sardar Vallabh Bhai Patel University of Agriculture and Technology Meerut	Dr B.S. Chaudhary Director of Administration Sardar Vallabh Bhai Patel University of Agriculture and Technology Modipuram, Meerut Uttar Pradesh-250110
25.	Tamil Nadu Agricultural University Coimbatore	Dr A.K. Mahendran Assistant Professor Department of Agricultural Rural Management Tamil Nadu Agricultural University Coimbatore, Tamil Nadu-641003
26.	Tamil Nadu Veterinary & Animal Sciences University Chennai	Dr K.N. Selva Kumar Professor and Head Department of Animal Husbandry Economics Madras Veterinary College Chennai, Tamil Nadu - 600051
27.	U. P. Pandit Deendayal Upadhyay Pashu Chikitsa -Vigyan Vishwavidyalaya Evan Go Anusandhan -Sansthan Mathura	Dr P.K. Shukla Director Training & Placement Cell U.P.Pandit Deendayal Upadhyay Pashu Chikitsa - Vigyan Vishwavidyalaya Evan Go Anusandhan – Sansthan, Mathura Uttar Pradesh- 281001
28.	University of Agricultural Sciences Dharwad	Dr V.R. Kiresur Head, PPMC University of Agricultural Sciences (UAS) Krishi Nagar, Dharwad Karnataka – 580005

S.N.	University	Name & Address of Nodal Officer
29.	Central Agricultural University Imphal	Dr N. Ram Singh Professor of Agricultural Economics College of Agriculture Central Agricultural University Imphal, Manipur - 795 004
30.	National Dairy Research Institute (NDRI) Karnal	Dr Rameshwar Singh Registrar National Dairy Research Institute (NDRI) Karnal, Haryana-132001
		Prof. Surendra Singh Principal Scientist and Controller of Exams NDRI, Karnal, Haryana-132001
31.	Central Institute of Fisheries Education (CIFE) Mumbai	Dr G. Venkateshwarlu Senior Scientist Central Institute of Fisheries Education Versova, Mumbai Maharashtra-400061
32.	Indian Veterinary Research Institute (IVRI) Izatnagar	Dr Rishendra Verma Head, Division of Standardization Indian Veterinary Research Institute Izatnagar Uttar Pradesh-243122
33.	Aligarh Muslim University Aligarh	Prof. Javed Musarrat, Chairman Department of Agricultural Microbiology Faculty of agricultural Sciences Aligarh Muslim University, Aligarh Uttar Pradesh- 202002
34.	Banaras Hindu University Varansi	Dr J.S. Srivastava Professor Department of Mycology and Plant Pathology Institute of Agricultural Sciences Banaras Hindu university Varansi, Uttar Pradesh-221005
35.	Gandhigram Rural Institute Gandhigram	Dr T.T. Ranganathan Reader and Faculty in charge Faculty of Agriculture and Animal Husbandry Gandhigram Rural Institute Gandhigram, Dindigul District, Tamil Nadu

Annex 3.2: Generation of ideas for development of the questionnaires

Respondents: Participants of MDP for Directors of Research of SAUs (10-11 September 2004) at NAARM, Hyderabad

AP Cess Project Title: Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System in India to Face Challenges of GATS (General Agreement on Trade in Services).

Objectives:

1. To analyze GATS obligation and mechanisms with respect to higher agricultural education system, and develop recommendation domain.
2. To find out potential risks and opportunities in trade in educational services with respect to- preparedness, commitments in service delivery and receiving service (*modus operandi* and country of interest) and capacity building in agricultural education system.
3. To identify the competitive advantages of Indian higher agricultural education system to take maximum advantage.

FOR DEVELOPING QUESTIONNAIRE (for faculty and administrative authorities of SAUs) PLEASE GIVE IDEAS WITH RESPECT TO FOLLOWING MODES OF SERVICE SUPPLIES- WHAT ELEMENTS QUESTIONNAIRE SHOULD HAVE?

- a. Mode-1: *Cross-border supply of services*- As distance education
- b. Mode-2: *Consumption abroad*- As Indian students study abroad or foreign students study in India
- c. Mode-3: *Commercial presence*- Territorial presence campuses of Indian universities abroad or foreign universities in India.
- d. Mode-4: *Presence of natural persons*- Professors going abroad or vice versa.

<p><i>Ideas can be written in this box</i> Your Name----</p>
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Annex 3.3: List of parameters considered for data collection

S. N.	Code	Question/ Item for observation	Method	Data type
1.	M1A1	Does your university provide degree/ non-degree/ non-formal education in agriculture in distance mode through print/electronic/internet media? Y/N, If yes-How many students, What are courses? UG/PG/PhD	Q-LC	PND
2.	M2A21	Does your university have any career counseling unit/placement unit for Indian students willing to go abroad for study? Please tick Career counseling unit/placement unit. Y/N	Q-LC	PND
3.	M2B25	Do you have any foreign student in your university- Y/N, if yes (a) how many (b) what courses UG/PG/PhD/any other (c) which countries they belong to	Q-LC	PND
4.	M2B26	Do you have any quota for foreign students including NRI, PIO in your university- Y/N, if yes how much? For UG/PG/PhD	Q-LC	ND
5.	M2B27	Does your university have any collaboration; tie up, joint venture with any foreign institute/ university in research? Y/N, If Yes, whether it helped in bringing foreign students to your university? Y/N	Q-LC	
6.	M2B40	Do you have any career-counseling unit for foreign students willing to come to your university for study? Y/N	Q-LC	PND
7.	M3A45	Whether your university has commercial presence in other countries? 1. No 2.Yes- by official representatives abroad 3.Yes- by franchise in other countries 4. Yes- by joint degree program 5. Yes- by twining program-collaborative arrangements for pursuing degree course in India and a foreign country 6. Yes- a campus abroad	Q-LC	PND
8.	M3A46	Has your university ever done efforts for providing education abroad or registering commercial presence in other countries? Please tick the appropriate options given below 1. No, 2.Yes- By appointing official representatives, 3. Yes- By giving franchise in other countries, 4. Yes- By joint degree program, 5 Yes- By Collaborative arrangements for pursuing degree course in India and a foreign country, 6. Yes- By proposing to set up campus abroad	Q-LC	
9.	BAS105	Whether your university has started any new college/ course or new faculty in last three years? Y/N	Q-LC	BD
10.	BAS107	Current student strength of entire university 1. UG 2. PG 3. PhD	Q-LC	BD
11.	BAS108	Number of University merit scholarships given to students of various courses. 1. UG 2. PG 3. PhD	Q-LC	BD
12.	BAS109	Category wise available teachers (only) in university 1. Assistant Professor 2. Associate Professor 3. Professor	Q-LC	BD
13.	BED115	Annual salary component of university staff 1.Teaching staff 2. Non teaching staff	Q-LC	BD
14.	BED116	Annual receipt to the university from student's fees.	Q-LC	BD

S. N.	Code	Question/ Item for observation	Method	Data type
15.	BED118	Expenditure incurred by university per student/ annum. Year- 2002-03, 2003-04	Q-LC	BD
16.	BED119	Current fee (Rupees) for one whole academic programme for Indian students and foreign students- PG/PhD for Agriculture, Dairy Science, Engineering, Fisheries, Forestry, Home Science, Horticulture, Veterinary, Others	Q-LC	BD
17.	BED120	In your university what is approximate monthly living expenses (Rupees/month) for Indian and Foreign students staying in the hostel. 1. Indian student 2. Foreign student w.r.t Lodging/Room rent, Boarding and Food Charges	Q-LC	BD
18.	M1A2	In your subject , do you recommend that your university must start distance education through print/ electronic/internet? Y/N If Yes, Which media, Print/Electronic/Internet	Q	PND
19.	M1B11	If foreign universities provide a degree recognized in India to Indian students through distance education, will it reduce the mobility of Indian students going abroad? Y/N	Q	PND
20.	M2A19	In your opinion what is the preferred system of sending students abroad for study- give your ranking first (1) to fourth (4) to the following options. (a) Let students go at their own (b) Banks/Financial Institutions must provide easy interest education loan to talented students (c) ICAR must provide scholarship to talented students (d) Talented students go under twining degree program of Indian and foreign universities (part in India & part abroad) (e) Any other (Please mention)	Q	PND
21.	M2A22	Do you feel that there must be a career-counseling unit in your university for supporting prospective students willing to go abroad for further study? Y/N	Q	PND
22.	M2A23	In your college/university , what are the major disciplines in which generally students are going abroad, please give two.1. 2.3	Q	PND
23.	M2B38	To increase the inflow of foreign students, should ICAR/University/Indian Bank provide scholarships to them? Please tick 1. Scholarships, 2. Loans, 3. Both, 4. Can't say	Q	PND
24.	M2B41	In case, there are less number of foreign students in your University, what could be the reasons in your point of view? Please write three most important reasons No Comment, 1. 2.3.	Q	PND
25.	M3A44	In the present scenario, what is the best method of establishing commercial presence of your university abroad (<i>please write 1,2,3 as priority</i> in front of following options)? (a) A joint degree program between your university and a foreign university at its campus abroad, where faculty from your university go abroad to deliver part of their courses (b) A twining program between your university and a foreign university at its campus abroad, and students	Q	PND

S. N.	Code	Question/ Item for observation	Method	Data type
		come to your university in India for partial fulfillment of degree. (c) Your university set up a campus abroad		
26.	M3A47	For PG or PhD Programme should your university register its commercial presence in developing nations or developed nations? Give your priority by writing 1 for first priority or 2 for second priority against options- (a) Developing nations---- (b) Developed nations----	Q	PND
27.	M3A48	If your university plans to initiate a joint program (UG/PG/PhD) or set up campus abroad, please suggest 3 countries in order of priority which have high potential & probability of success. 1st priority--- 2nd priority---3rd priority----	Q	PND
28.	M3A49	In your subject specialization can you suggest two foreign universities/institutions for collaboration for joint degree program or twinning program? 1. 2.	Q	PND
29.	M3A50	Can you suggest any Alumni/NRI/PIO/Foreign professor who can help in commercial establishment of your university abroad? Please give his name and university affiliations.	Q	PND
30.	M3B54	If Foreign universities would be willing to establish commercial presence in our country; from the Indian interests point of view, what shall be the best approach (<i>please write 1,2,3 as priority in front of following options</i>).(a) A joint degree program between a foreign university and your university at your present campus, where official representatives from abroad come to deliver part of their courses (b) A twinning program between a foreign university and your university at your present campus, and students go to partner foreign university abroad for partial fulfillment of degree. (c) Foreign university set up a campus in India	Q	PND
31.	M3B55	Is your College/university ready to face international competition arising by setting up of campuses by foreign universities in India? Y/N If No, what could be possible reasons? 1. 2.	Q	PND
32.	M3B58	For establishing campus in India, which kind of universities must be allowed (please tick appropriate option. 1. Private universities 2. Public universities 3.Both	Q	PND
33.	M4A67	Have you ever been abroad? Please tick. 1. No 2. Yes for Training 3. Yes for Research consultancy 4. Yes for Teaching assignments 5. For Seminars, Conferences	Q	PND
34.	M4A68	Have you ever been invited by any foreign institution for providing education service in India or abroad? Y/N	Q	PND
35.	M4B72	Should we invite foreign professors to India for providing educational service? Y/N	Q	PND
36.	M1A3	Whether your college/division is willing to provide any course through distance education- Y/N; A. If Yes, a.	Q-Dean	PND

S. N.	Code	Question/ Item for observation	Method	Data type
		Please suggest, which courses? 1. Degree (Formal) courses----- 2. Non-Degree (Non- formal) courses--- ----b. Through which media? Please tick: 1.Print, 2. Electronic, 3. Internet B. If No, state two topmost constraints 1. ----- 2. -----		
37.	M1B10	If foreign universities are allowed to provide degree to Indian students through distance education via electronic media/internet, is your college/division willing to be partner in conducting the following for joint degree program - Y/N for 1. Practical classes 2. Theory classes 3.Examination	Q-Dean	PND
38.	M2A2	Does your college/division has any collaborative arrangement (joint venture, twining program etc) for sending students abroad for study to pursue their course? Y/N	Q-Dean	PND
39.	M2B27	Does your college/division has any collaboration, tie up, joint venture with any foreign instt/ university in research- Y/N, if yes whether it helped in bringing foreign students to your university- Y/N	Q-Dean	PND
40.	M2B28	How much % of seats in your college/division may be allocated to foreign students in different courses? 1.UG 2. PG 3. PhD	Q-Dean	PND
41.	M2B29	In your college/department/division , which of the following course is expected to draw foreign students for study? Please tick <i>only one</i> (most important in your opinion) of the options given below- 1. Specialized Bachelor Degree 2. PG 3. PhD 4. Any other (specify)	Q-HoD	PND
42.	M2B30	In your college/department/division, which of the following categories of nations is expected to send maximum foreign students to study? Please tick <i>only one</i> (most important in your opinion) of the options given below. 1.Developed nations 2. Developing nations of Asia 3. Developing nations of Africa 4. Developing nations of Latin America	Q-HoD	PND
43.	M2B33	Do you feel that the living conditions at your college/university are appropriate for international students- Please tick in relevant column Y/N (hostel, food, internet, Recreational facilities)	Q-HoD	PND
44.	M2B35	In your college/division, how much annual fees (in Rupees) do you propose for foreign students ? For UG/PG/PhD in Agriculture, Dairy Science, Engineering, Fisheries, Forestry, Home Science, Horticulture, Veterinary, Others	Q-Dean	PND
45.	M2B43	Do you feel that presence of foreign students in your university may boost the export of rural items such as traditional art/artifacts/music/rural technology and rural products from your region? Y/N, If yes please give two most important items in your knowledge. 1. 2.	Q-HOD	PND
46.	M3A50	Can you suggest any Alumni/NRI/PIO/Foreign professor who can help in commercial establishment of your university abroad? Please give his name and	Q-HoD	PND

S. N.	Code	Question/ Item for observation	Method	Data type
		university affiliations.		
47.	M2B54	If foreign universities would be willing to establish commercial presence in our country; from the Indian interests point of view, what shall be the best approach? Please write 1,2,3 as priority in front of following options: _____ a. A joint program between a foreign university and your university at your present campus, where official representatives from abroad come to deliver part of their courses, _____ b. A twining program between a foreign university and your university at your present campus, and students go to partner foreign university abroad for partial fulfillment of degree, _____ c. Foreign university sets up a campus in India.	Q-HoD	
48.	M3B55	Is your college/university ready to face international competition arising by setting up of campuses by foreign universities in India? Y/N If No, what could be the possible reasons? Reason1. _____ Reason 2. _____	Q-HoD	PND
49.	M3B57	Did your college/division receive any request/proposal from abroad to setup campus in India with your collaboration? Y/N	Q-Dean	PND
50.	M3B59	While establishing the commercial presence in India, in your opinion what may be the preferred approach of foreign universities? Pl tick the most appropriate of below. (a) Opening the campus independently (b) Starting the campus in collaboration with Indian universities (c) Without any campus, initiating a Joint degree program/Twining program with Indian university.	Q-HoD	PND
51.	M4A67	Have you ever been abroad? Please tick. 1. No 2. Yes for Training 3 Yes for Post graduation 4. Yes for PhD 5. Yes for Post Doctoral Research 6. Yes for Teaching assignments 7. Yes for Seminars, Conferences etc	Q-HoD	PND
52.	M4A68	Are you invited by the foreign institution for providing education service in India or abroad? Y/N	Q-HoD	PND
53.	M4B71	Do you invite professors from abroad for educational service in college/department/division? Please tick. 1.Never 2. Occasionally 3.Frequently 4.Regularly	Q-Dean	PND
54.	M2B31	Prioritized list of subjects of expected arrival of foreign students	B	PND
55.	M2B32	Prioritized list of country wise expected arrival of foreign students	B	PND
56.	M2B42	Effective strategies for attracting foreign students-Marketing strategy-Operational strategy-Academic & non academic issues- other issues	B	PND
57.	M3A51	Effective strategies for commercial presence abroad: Marketing strategy (promotional)-Operational strategy-Academic & non academic issues-process/regulations-country level mechanisms- other issues	B	PND
58.	M3B56	Preparedness requirements to face the entry of	B	PND

S. N.	Code	Question/ Item for observation	Method	Data type
		foreign universities-country level control & regulation mechanisms		
59.	SPI87	SWOT analysis & competitive edge-when India is a service exporter-M2B, M3A, M4A	B	PND
60.	SPI88	Prioritized options of all the modes of supply-while India exporter and importer	B	PND
61.	M1A5	Who are the clients that are different than normal degree seeking students?	I-OU	PND
62.	M1A6	How to attract foreign students for distance learning?	I-OU	PND
63.	M1A7	What are components and the cost of high quality distance learning courses?	I-OU	PND
64.	M1A8	Major likely issues of competition with domestic private/ foreign suppliers.	I-OU	PND
65.	M1B9	In view of practical in agricultural education-what are possible issues of discussion?	I-OU	PND
66.	BED122	Expenditure pattern of various categories of Indian/ foreign students	I-std	BD-PND
67.	BED123	Academic/non academic facilities required by the foreign students	I-std	BD-PND
68.	M3A52	Process of setting up campus abroad by Indian universities-mode3-4	I-CS	CS
69.	G173	Should training and testing services be included	I-PM	NP
70.	G179	Guidelines for recognition of Deemed to be University –relationship with ICAR	I-PM	ND
71.	G180	IPR issues	I-PM	ND
72.	M2B36	What to be sharing pattern (%)of course fee charged to foreign students	I-PM	PND
73.	M3A53	Issues in setting up campus by the Indian university abroad-process/regulations	I-PM	NP
74.	M3B61	Socio-cultural implications of foreign suppliers coming to India	I-PM	NP
75.	M3B62	How rural sector would get maximum benefit from foreign university in India	I-PM	ND
76.	M3B63	Present/ proposed norms, standards, process, regulations, controlling arrangements of foreign suppliers; Essentiality for Foreign Service providers for registration/ regulatory authority/ country level mechanism/control of fees	I-PM	NP
77.	M3B64	How much of workforce from source country must be taken by the foreign universities	I-PM	NP
78.	M3B65	Amount foreign suppliers must deposit with government	I-PM	NP
79.	M3B66	Actions against spurious foreign education suppliers	I-PM	NP
80.	M4A69	Visa requirements when Indian professors move abroad/ Foreigner come India for providing education service.	I-PM	NP
81.	M4A70	Wage parity/ social security issues while Indian professors move abroad/ Foreigners come India	I-PM	NP
82.	SPI81	Mutual recognition of degrees/ qualifications-multilateral, bilateral negotiations	I-PM	NP
83.	SPI82	How many universities to be prepared for international competition-ranking criteria	I-PM	NP

S. N.	Code	Question/ Item for observation	Method	Data type
84.	SPI86	International quality framework as provided by TRIPS regulations	I-PM	ND
85.	SPI89	Benefits of brand names like IIT	I-PM	ND
86.	M2A12	Subject-wise number of Indian students studying abroad	O	ND
87.	M2A13	Outflow of students from different countries/ continents to developed nations	O	ND
88.	M2A16	Scholarships offered by foreign Governments to Indian students for pursuing higher education under cultural exchange program	O	ND
89.	M2A17	Other sources of funding for study abroad / loan etc	O	ND
90.	M2A18	Country wise fee structure/ expenditure per student/living expenses	O	ID
91.	M2B19	No. of foreign students in Indian universities	O	ND
92.	M2B37	Source-wise Financial Assistance to foreign students	O	PND
93.	M3B60	Current strategies of foreign institutions to register their commercial presence in India	O	ND
94.	G175	Tune and amount of benefits of export of education to the developed nations	O	ID
95.	G176	How much India loose out of student going abroad	O	ND
96.	G177	Consumer protection framework of India	O	ND
97.	G178	Service tax regulations	O	ND
98.	SPI85	Barriers to trade under four modes	O	PND
99.	SPI90	Export potential of agricultural education	O	PND
100.	SPI91	Import potential of agricultural education	O	PND
101.	CS97	Country cases-Singapore/ Thailand/ Malaysia	O	CS
102.	G174	Fee structure in private institutions	O	ND
103.	ID100	Foreign students in various countries	O	ID
104.	BED114	Budget of university	O	BD
105.	BAS110	Ratio of sanctioned strength of teaching staff and students	Stat anal.	BD-PND
106.	BAS111	University wise Student Teacher Ratio (STR)	Stat anal.	BD-PND
107.	BAS112	University wise average no. of student per available teacher	Stat anal.	BD-PND
108.	BED121	Expenditure- per student/ annum by students	Stat anal.	BD-PND

Annex 3.4: Questionnaire for Associate Deans/Principals/ Heads of Department of SAUs/CAU/CU and Heads of Division of ICAR Deemed Universities

**National Academy of Agricultural Research Management
Rajendranagar, Hyderabad- 5000 30**

Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System
in India to Face Challenges of GATS
AP Cess -Project Code No. 0182079

Respondent's Profile:

1. Name:
2. Designation:
3. Department/ Division:
4. College:
5. Campus:
6. University:
7. **Professional Subject:**
8. Job Experience (*pl. tick*): 10-15 yrs 15- 25 yrs >25 yrs
9. Sex (*pl. tick*): Male / Female
10. Age in years as on 01-01-2005: _____
11. **Basic Pay:**
12. Percent of your time spent in professional activities:

Teaching	Research	Extension	Others	Total
				100%

Guidelines for filling up the questionnaire:

PLEASE SEE BACKGROUND INFORMATION ON LAST PAGE

- a) Most of the questions have options Y / N, please tick 'Y' for yes and 'N' for no; some questions have query after Y/N, please give your response to those queries. Some questions are given options; please tick *only one option* wherever asked to do so.
- b) Joint Degree Program means Two universities (X, Y) collaborate; the students are enrolled and study in 'X' university, while representatives from collaborative 'Y' university deliver their part of course by visiting the former 'X' university. The degree is awarded jointly.
- c) Twinning Program means Two universities (X,Y) collaborate; the students are enrolled and mainly study in 'X' university; for partial fulfillment of coursework the students visit collaborative 'Y' university. The degree is awarded either jointly or by the former university.
- d) NRI- Non Resident Indian; PIO- Persons of Indian Origin; GOI -Government of India.
- e) You are expected to respond to questions with respect to agricultural education only.

Exploratory Survey Questions No. 1- 18

Associate Deans/Principals of SAUs/CU/CAU and Heads of Division of ICAR Deemed Universities are expected to respond to all questions **including marked questions (*)**.

Heads of Department of SAUs/CU/CAU, please respond to all questions other than marked (*) questions.

1. *M1A3: Whether your college / division is willing to provide any course through distance education? **Yes / No**

A. If **Yes**,

a. Please suggest, which courses?

1. Degree (Formal) courses _____

2. Non-Degree (Non-Formal) courses _____

b. Through which media? Please tick:

1. Print

2. Electronic

3. Internet

B. If **No**, state two topmost constraints

1. _____

2. _____

2. *M1B10: If foreign universities are allowed to provide degree to Indian students through distance education via electronic media / Internet, Is your college / division willing to be a partner in conducting the following for joint degree program? Please tick:

	Yes	No
1. Practical classes	_____	_____
2. Theory classes	_____	_____
3. Examination	_____	_____

3. *M2A20: Does your college / division has any collaborative arrangement (joint venture, twining program etc) for sending students abroad for study to pursue their course? **Yes /No**

4. *M2B27: Does your college / division has any collaboration, tie up, joint venture with any foreign institute / university in research?

Yes /No

If **Yes**, whether it helped in bringing foreign students to your university?

Yes /No

5. *M2B28: How much % of seats in your college / division may be allocated to foreign students in different courses?

1. UG _____

2. PG _____

3. PhD _____

6. M2B29: **In your college / department / division**, which of the following course is expected to draw maximum foreign students for study? Please tick *only one* (most important in your opinion) of the options given below:

Bachelor Degree

PG

PhD

Any other (specify) _____

7. M2B30: **In your college / department / division**, which of the following categories of nations is expected to send maximum foreign students for study? Please **write 1,2,3,4 as priority** in front of the following options:

_____ a. Developed nations

_____ b. Developing nations of Asia

_____ c. Developing nations of Africa

_____ d. Developing nations of Latin America

8. M2B33: Do you feel that the living conditions at your college / university are appropriate for international students? Please tick in relevant column.

Facility	Yes	No
Hostel		
Food		
Internet		
Recreation facilities		

9. *M2B35: In your college / division, how much annual fees (in Rupees) do you propose for **foreign students**?

Faculty	UG	PG	PhD
Agriculture			
Dairy science			
Engineering			
Fisheries			
Forestry			
Home science			
Horticulture			
Veterinary			
Others (please specify)			

10. M2B43: Do you feel that presence of foreign students in your university may boost the export of rural items such as traditional art/artifacts/music/rural technology rural products etc., from your region? **Yes /No**

If **Yes**, please give two most important items in your knowledge.

1. _____
2. _____

11. M3A50: Can you suggest any Alumni/NRI/PIO/Foreign professor who can help in commercial establishment of your university abroad? Please give his name and university affiliations. _____

12. M3B54: If foreign universities would be willing to establish commercial presence in our country; **from the Indian interests point of view**, what shall be the best approach? *Please write 1,2,3* as priority in front of following options:

_____ a. A joint program between a foreign university and your university at your present campus, where official representatives from abroad come to deliver part of their courses

_____ b. A twining program between a foreign university and your university at your present campus, and students go to partner foreign university abroad for partial fulfillment of degree

_____ c. Foreign university sets up a campus in India

13. M3B55: Is your college / university ready to face international competition arising by setting up of campuses by foreign universities in India? **Yes** / **No**

If **No**, what could be the possible reasons?

Reason 1. _____

Reason 2. _____

14. *M3B57: Did your college / division receive any request / proposal from abroad to setup campus in India with your collaboration? **Yes** / **No**

15. M3B59: While establishing the commercial presence in India, **in your opinion** what may be the preferred approach of foreign universities? Please tick *only one* (most important in your opinion) of the options given below.

Opening the campus independently

Starting the campus in collaboration with Indian universities

Without any campus in India, initiating a Joint program / Twinning program with Indian university.

16. M4A67: Have you ever been abroad? Please tick.

No

For Training

For Post Graduation

For PhD

For Post Doctoral Research

For Teaching Assignments

For Seminars, Conferences etc,

17. M4A68: Are you invited by any foreign institution for providing education service either in India or abroad in their collaborative institutions?

Yes

/No

18. *M4B71: Do you invite professors from abroad for providing educational service in your college/ department? Please tick.

1. Never

2. Occasionally

3. Frequently

4. Regularly

Thank you very much for your cooperation

Background Information about GATS *vis a vis* Questionnaire

The World Trade Organization (WTO), which came into enforcement from 1st January 1995, contains various multilateral agreements; General Agreement on Trade in Services (GATS) is one of the agreements and covers international trade in services. GATS exempt those services, which are supplied exclusively by government authority neither on a commercial basis nor in competition with one or more service suppliers. Education does not qualify for exemption, thus covered under GATS, that includes 11 other services also. The educational services are further categorized into five sectors (primary, secondary, higher education, adult education and other education). Education, overall, is one of the least committed sectors while only 44 of the 148 WTO members have made commitments in education; only 21 of these have included commitments to higher education. For the service supply, GATS has the following four modes of service delivery:

1. **Cross-Border Supply:** The provision of a service where the service crosses the border (does not require the physical movement of the consumer) e.g. distance education, virtual education through Internet etc.
2. **Consumption Abroad:** Provision of the service involving the movement of the consumer to the country of the supplier e.g. students who go to another country to study.
3. **Commercial Presence:** The service provider establishes or has presence of commercial facilities in another country in order to render service e.g. local university, satellite campuses, joint program, twinning program, official representatives etc.
4. **Presence of Natural Persons:** Persons traveling to another country on a temporary basis to provide service.

The present study concentrates on constraints and opportunities analysis with respect to higher education in agriculture by considering the following two situations under each mode of supply:

1. **Cross Border Supply:**
 - a. India Provide Education Service To Other Countries
 - b. Other Countries Provide Education Service To India
2. **Consumption Abroad:**
 - a. Indian Students Going Abroad For Education
 - b. Foreign Students Come To India For Education
3. **Commercial Presence:**
 - a. Indian University's Commercial Presence Abroad
 - b. Foreign University's Commercial Presence In India
4. **Movement Of Natural Persons:**
 - a. Indian Professors Move Abroad
 - b. Professors From Abroad Come To India

The implications of GATS to any nation and especially to developing nations like India are due to two important principles with respect to market access and domestic regulations. Under the principle of Most Favored Nation (MFN), the favors can't be granted to a nation while denying to other nations, unless exempted under MFN; under the principle of National Treatment (NT), the nationals of other countries can't be given less favorable treatment than the country's own nationals.

Annex 3.5: Questionnaire for Faculty of SAUs / CU / CAU/ Deemed Universities

**National Academy of Agricultural Research Management
Rajendranagar, Hyderabad- 5000 30**

Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System
in India to Face Challenges of GATS
AP Cess -Project Code No. 0182079

Respondent's Profile:

13. Name: _____

14. Designation: _____

15. Department: _____

16. College: _____

17. Campus: _____

18. University: _____

19. **Professional Subject:** _____

20. E-Mail: _____

21. Job Experience (*pl. tick*): <10 yrs 11-20 yrs >20 yrs

22. Sex (*pl. tick*): Male Female

23. Age in years (as on 01-01-2005) _____

24. **Basic Pay:** _____

25. Percent of your time spent in professional activities:

a. Teaching _____

b. Research _____

c. Extension _____

d. Others _____

Total 100%

Guidelines for filling up the questionnaire:

PLEASE SEE BACKGROUND INFORMATION ON LAST PAGE

- a. Most of the questions have options Y / N, please tick 'Y' for yes and 'N' for no; some questions have query after Y/N, please give your response to those queries. Some questions are given options; please tick *only one option* wherever asked to do so.
- b. Joint Degree Program means Two universities (X, Y) collaborate; the students are enrolled and study in 'X' university, while representatives from collaborative 'Y' university deliver their part of course by visiting the former 'X' university. The degree is awarded jointly.

- c. Twinning Program means Two universities (X,Y) collaborate; the students are enrolled and mainly study in 'X' university; for partial fulfillment of coursework the students visit collaborative 'Y' university. The degree is awarded either jointly or by the former university.
 - d. NRI- Non Resident Indian; PIO- Persons of Indian Origin; GOI -Government of India.
 - e. You are expected to respond to questions with respect to agricultural education only.
- Exploratory Survey Questions No. 1- 18

1. M1A2: Whether your **subject / course** can be taught through distance education? **Yes / No**

If **Yes**, which media, you recommend, Please tick: 1. Print
 2. Electronic
 3. Internet

2. M1B11: If foreign universities provide a degree recognized in India to Indian students through distance education, will it reduce the mobility of Indian students going abroad? **Yes /No**

3. M2A19: In your opinion what is the preferred choice of sending students abroad for study? Please give your **ranking first (1) to fourth (4)** to the following options:

SI No.	Option	Rank
a.	Let the students go at their own expenses	
b.	Banks/Financial Institutions must provide easy interest education loan to talented students	
c.	ICAR must provide scholarship to talented students	
d.	Talented students should go under twining degree program of Indian and foreign universities (part in India & part in abroad)	
e.	Any other (Please mention)	

4 M2A22: Do you feel that there must be a career-counseling unit in your university for supporting prospective students willing to go abroad for further study? **Yes / No**

5. M2A23: **In your college / university**, what are the major disciplines in which generally students are going abroad? Please give three:

Subject 1: _____

Subject 2: _____

Subject 3: _____

6. M2B38: To increase the inflow of foreign students, should ICAR/University/ Indian Bank provide the following to them? Please tick:

1.Sholarships	
2.Loans	
3.Both	
4.Can't say	

7. M2B41: In case, there are less number of **foreign students** in your university, what could be the reasons in your point of view? Please write three most important reasons.

a. No comments _____

b. Reason 1 _____

c. Reason 2 _____

d. Reason 3 _____

8. M3A44: In the present scenario, what is the best method of establishing commercial presence of your university abroad (*please write 1,2,3 as priority in front of following options*)?

_____ a. A joint degree program between your university and a foreign university at its campus abroad, where faculty from your university go abroad to deliver part of their courses.

_____ b. A twining program between your university and a foreign university at its campus abroad, and foreign students come to your university for partial fulfillment of degree.

_____ c. Your university sets up a campus abroad.

9. M3A47: For PG or PhD Programme should your university register its commercial presence in developing nations or developed nations? Give your priority by **writing 1 for first priority or 2 for second priority** against the options:

_____ a. Developing nations

_____ b. Developed nations

10. M3A48: If your university plans to initiate a joint program (UG/PG/PhD) or sets up campus abroad, please suggest 3 countries in order of priority, which have high potential & high probability of success.

1st priority _____

2nd priority _____

3rd priority _____

11. M3A49: In your **discipline**, can you suggest two foreign universities / institutions for collaboration for joint program (UG/PG/PhD) or twining programme?

1. _____

2. _____

12. M3A50: Can you suggest any Alumni/NRI/PIO/Foreign professor who can help in commercial establishment of your university abroad? Please give his name and university affiliations.

1. _____

2. _____

13. M3B54: If foreign universities would be willing to establish commercial presence in our country; **from the Indian interests point of view**, what shall be the best approach? *Please write 1,2,3 as priority* in front of following options:

_____ a. A joint program between a foreign university and your university at your present campus, where official representatives from abroad come to deliver part of their courses

_____ b. A twining program between a foreign university and your university at your present campus, and students go to partner foreign university abroad for partial fulfillment of degree

_____ c. Foreign university sets up a campus in India

14. M3B55: Is your college / university ready to face international competition arising by setting up of campuses by foreign universities in India? **Yes** / **No**

If **No**, what could be the possible reasons?

Reason 1. _____

Reason 2. _____

15. M3B58: For establishing campus in India, which kind of foreign universities must be allowed? Please tick appropriate option:

Private universities

Public universities

Both

16. M4A67: Have you ever been abroad? Please tick.

No

For Training

For Post Graduation

For PhD

For Post Doctoral Research

For Teaching Assignments

For Seminars, Conferences etc,

17. M4A68: Have you ever been invited by any foreign institution for providing education service in India or abroad? **Yes** / **No**

18. M4B72: Should we invite foreign professors to India for providing educational service? **Yes / No**

Thank you very much for your cooperation

Background Information about GATS *vis a vis* Questionnaire

The World Trade Organization (WTO), which came into enforcement from 1st January 1995, contains various multilateral agreements; General Agreement on Trade in Services (GATS) is one of the agreements and covers international trade in services. GATS exempt those services, which are supplied exclusively by government authority neither on a commercial basis nor in competition with one or more service suppliers. Education does not qualify for exemption, thus covered under GATS, that includes 11 other services also. The educational services are further categorized into five sectors (primary, secondary, higher education, adult education and other education). Education, overall, is one of the least committed sectors while only 44 of the 148 WTO members have made commitments in education; only 21 of these have included commitments to higher education. For the service supply, GATS has the following four modes of service delivery:

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- 2 **Consumption Abroad:** Provision of the service involving the movement of the consumer to the country of the supplier e.g. students who go to another country to study.
- 3 **Commercial Presence:** The service provider establishes or has presence of commercial facilities in another country in order to render service e.g. local university, satellite campuses, joint program, twining program, official representatives etc.
- 4 **Presence of Natural Persons:** Persons traveling to another country on a temporary basis to provide service.

The present study concentrates on constraints and opportunities analysis with respect to higher education in agriculture by considering the following two situations under each mode of supply:

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 - India Provide Education Service To Other Countries
 - Other Countries Provide Education Service To India
2. **Consumption Abroad:**
 - Indian Students Going Abroad For Education
 - Foreign Students Come To India For Education
3. **Commercial Presence:**
 - Indian University's Commercial Presence Abroad
 - Foreign University's Commercial Presence In India
4. **Movement Of Natural Persons:**
 - Indian Professors Move Abroad
 - Professors From Abroad Come To India

The implications of GATS to any nation and especially to developing nations like India are due to two important principles with respect to market access and domestic regulations. Under the principle of Most Favored Nation (MFN), the favors can't be granted to a nation while denying to other nations, unless exempted under MFN; under the principle of National Treatment (NT), the nationals of other countries can't be given less favorable treatment than the country's own nationals.

Annex 3.6: Questionnaire for Nodal Officer

**National Academy of Agricultural Research Management, Rajendranagar,
Hyderabad- 5000 30**

Identifying Strategic Issues and Prospective Approaches in Higher Agricultural
Education System in India to Face Challenges of GATS

AP Cess -Project Code No. 0182079

Schedule of Status Information

26. Name of the Nodal Officer:

27. University:

Guidelines for filling up the Schedule:

PLEASE SEE BACKGROUND INFORMATION ON LAST PAGE

- a) Most of the questions have options Y / N, please tick 'Y' for yes and 'N' for no; some questions have query after Y/N, please give your response to those queries. Some questions are given options; please tick *only one option* wherever asked to do so. The nodal officers are requested to fill up the information at requisite places.
- b) Joint Degree Program means Two universities (X, Y) collaborate; the students are enrolled and study in 'X' university, while representatives from collaborative 'Y' university deliver their part of course by visiting the former 'X' university. The degree is awarded jointly.
- c) Twining Program means Two universities (X,Y) collaborate; the students are enrolled and mainly study in 'X' university, for partial fulfillment of coursework the students visit collaborative 'Y' university. The degree is awarded either jointly or by the former university.

Exploratory Survey Parameters No. 1- 17

1. M1A1: Does your university provide degree/ nondegree/ nonformal education in agriculture through distance mode? Yes

/No

If Yes,

A. Through which media?

Medium	Yes	No
Print		
Electronic		
Internet		

B. How many students in various courses?

Course	No. Of Students
UG	
PG	
PhD	

2. M2A21: Does your university have any career counselling unit / placement unit for Indian students willing to go abroad for study? Please tick:

	Yes	No
Career counseling unit		
Placement unit		

3. M2B25: Do you have any foreign students in your university? Yes /No

If Yes,

Courses	No. of students	Countries to which the students belong
UG		1.
PG		2.
		3.

PhD		4.
Any other		5.

4. M2B26: Do you have any quota for foreign students including NRI, PIO in your university? **Yes** **/No**

If **Yes**, how much?

UG _____

PG _____

PhD _____

5. M2B27: Does your university has any collaboration, tie up, joint venture with any foreign institute/university in research?

Yes **/No**

If **Yes**, whether it helped in bringing foreign students to your university?

Yes **/No**

6. M2B40: Do you have any career counselling unit for foreign students willing to come to your university for study? **Yes** **/No**

7. M3A45: Does your university have commercial presence in other countries?

- No
- By official representatives abroad
- By franchise in other countries
- By joint degree program
- By twining program-collaborative arrangements for pursuing degree course in India and a foreign country
- A campus abroad

8. M3A46: Has your university ever done efforts for providing education abroad or registering commercial presence in other countries? Please tick the appropriate option(s) given below:

- No
- By appointing official representatives
- By giving franchise in other countries
- By joint degree program
- By collaborative arrangements for pursuing degree course in India and a foreign country
- By proposing to set up campus abroad

9. BAS105: Whether your university has started any new college/course or new faculty in last three years?

	Yes	No
New College		
New Course		
New Faculty		

10. BAS107: Current student strength of the entire university

1. UG _____
2. PG _____
3. PhD _____

11. BAS108: Number of University merit scholarships given to students of various courses

1. UG _____
2. PG _____
3. PhD _____

12. BAS109: Category wise availability of teachers (only) in the university

Designation	Sanctioned	Filled
Assistant Professor/Scientist		
Associate Professor/Senior Scientist		
Professor/ Principal Scientist		

13. BED115: Annual salary component of university staff.

Staff	Rupees in Lakhs
Teaching Staff	
Non-Teaching Staff	

14. BED116: Annual receipts of the university from student fees. _____

15. BED118: Expenditure incurred by university per student/annum.

Year	Expenditure per student / annum
2002-03	
2003-04	

16. BED119: Current fee (Rupees) for one whole academic programme for Indian students and foreign students:

Faculty	Indian Students		Foreign Students	
	PG	PhD	PG	PhD
Agriculture				
Dairy Science				
Engineering				
Fisheries				
Forestry				
Home science				
Horticulture				
Veterinary				
Others (please specify)				

17. BED120: In your university what is the approximate monthly living expenses (Rupees/month) for Indian and Foreign students staying in the hostel?

Students	Lodging / Room rent	Boarding and Food charges
Indian students		
Foreign students		

Please send the filled in Schedule to NAARM

Thank you very much for your cooperation

Annex 3.7: Newspaper Advertisements Analysis of Commercial Presence of Foreign Education Suppliers, in India

National Academy of Agricultural Research Management, Hyderabad- 5000 30

ICAR AP Cess Project: Identifying Strategic Issues and Prospective Approaches in Higher Agricultural Education System in India to Face Challenges of GATS

Newspaper-----Month-----Date-----Sheet Number-----

Advt S.N.	Type of Advertisement ¹						Purpose ²			Country ³							Subject ⁴								D.E ⁵			Remarks			
	1	2	3	4	5	6	1	2	3	1	2	3	4	5	O	1	2	3	4	5	6	7	8	1	2	3					
1																															
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															

¹ Advertisement Type: Indian Agent- 1; Agent+ Official Representative-2; Direct Foreign University- 3; Exhibition / Seminar Direct- 4; Exhibition/ Seminar Joint- 5; Joint Collaboration between institutes- 6.

² Purpose of Advertisement: On Spot Admission-1; Meeting and Information-2; Information- 3.

³ Country: Australia-1; USA-2; UK-3; Canada- 4; Germany- 5; Others- Give name of the Country in remark column.

⁴ Subject: Business Management-1; Engineering- 2; Computer / Mathematics- 3; Medicine- 4; Law- 5; Physical Science- 6; Agriculture- 7; Agricultural related Biological Sciences (Microbiology, Biochemistry, Genetics, Biotechnology)- 8.

⁵ Distance Education Advertisements by Indian and Foreign Institutions: Indian Private- 1; Indian Public- 2; Foreign Institution- 3.

⁶ If Agricultural University is Involved: Write University name here-----

**Annex 3.9: Interview Schedule for Foreign Students Studying in SAUs/
General Universities**

**National Academy of Agricultural Research Management, Rajendranagar,
Hyderabad- 5000 30
<http://icar.naarm.ernet.in>**

**ICAR AP Cess Project: Identifying Strategic Issues and Prospective Approaches in Higher
Agricultural Education System in India to Face Challenges of GATS**

University:

1. Name of the student:
2. Sex:
3. Country:
4. Course and duration of the course:
5. Are you a scholarship holder? **Yes** **/No**
6. Scholarship details:

Source	Amount

7. Total Course Fee:
8. Admission Procedure:
9. Reasons for applying in India.
10. Reasons for opting this particular University.
11. Did you consider other developing nations for admission?
12. Reasons for not opting developed nations.

13. Monthly living Expenses (Rs.)

Item	Hosteller	Day Scholar
Accommodation		
Food		
Recreation and entertainment		
Personal grooming		
Any other		
Other Expenses incurred: Souvenirs for relatives in their home country		

14. Annual Expenditure incurred on other items (Rs.):

Sports	Health	Insurance	Books, study material etc.	Any other (Pl. explain)

15. Do you have access to Internet facility? **Yes / No**

If Yes, Where? University _____ (or) Other Place _____

16. Rating of Infrastructural facilities:

	Accommodation	Food etc.	Library	Internet	Laboratory	Quality of Teachers	Quality of education
Not satisfactory							
Satisfactory							
Good							
Very Good							

17. What was your objective to study in India?

18. Whether your objective has been fulfilled or not?

19. Any suggestions for improving the quality of education in India?

Annex 6.1: List of recommended degree and non degree courses that can be offered through DE by AUs

Degree courses	Non Degree Courses
Agribusiness management, MBA	Three-months certificate courses
Aquatic environment management	Agriculture journalism
Agriculture extension and communication	Watershed management and environmental protection
UG Degree: B.Sc (Ag), B.Tech (Dairying), BVSc	AI and synchronization of estrous
PG Degree: M.Sc, MVSc, M. Tech	Aquaculture
PhD programme	Awareness about food hygiene / kitchen hygiene, child care, personal hygiene and zoonotic diseases
Rural employment through A.H.	Biodiversity, environmental science micro propagation, hybrid seed, bio fertilizer etc.
Diploma in zoonotic diseases	Business Management
Civil, electrical, electronics, computer and mechanical engineering.	Capacity building programme for vocational teachers in Agri-business Management
Programme in soil and water engineering /Water resources	Capacity building for SPS compliant livestock products
Dairy Farming	Diploma in Seed technology, Seed certification course
Diagnosis of bacterial diseases	Dairy Farming, dairy processing
Dietetics and food service management	Poultry farming
Disease diagnosis and Veterinary pathology	Diploma in Agriculture marketing
Dynamics at population growth and rural development	Certificate course on PHT, Nursery and garden management, vegetable seed production and technology Orchard management, horticultural crops
Economics	Diploma in dairy business management
Fish Post harvest technology	Dry land farming, Integrated farming system
GIS, Remote sensing	Fish product development and quality assurance
Management of dairy animals for youths	GIS and Remote sensing application in water resources engineering
Journalism and Mass communication	Institution management
HRM and MPP	Certificate course on some chosen topic of fisheries
Micro irrigation, Green house technology	Molecular genetics
Nutrition	Livestock disease and their general management
Optimization and systems analysis	Diploma in Agriculture certification course
Poultry science	Germplasm conservation
	Short training in vegetable science
	Textiles and apparel designing
	Tracer's application in agricultural / biological sciences
	Training for seed production

Annex 7.1: Potential list of exportable rural goods and services through international students

S.N.	Important Rural items / services
I	Handicrafts, Traditional arts and crafts
1.	Handicraft articles
2.	Appliqué work of pipile
3.	Bangle Industry
4.	Bidri and Chidri crafts
5.	Brassware
6.	Decoration pieces of wood
7.	Durries
8.	Filigree work of Cuttack
9.	Folk arts
10.	Hand made products
11.	Handicrafts of weaving like Duri, hand made fans etc.
12.	Handicrafts from Kumaon region
13.	Hill handicrafts
14.	Himachal Pradesh handicrafts
15.	Indigenous decorative materials
16.	Kacchi bhara items
17.	Local craft - metal and clay
18.	Rural technology in handicraft warlas, textiles etc.
19.	Traditional art like Pattachitra
20.	Traditional arts of Uttaranchal as well as pipilis artwork from multicultural like Bengal, Tribal areas, Bihar and Nepal
21.	Traditional furnishing, furniture and designs
22.	Traditional games and toys
23.	Wall hanging made up of brass
24.	Wall pieces, wood craft, stone carving work
25.	Wooden items of North east
II	Rural indigenous technologies
26.	Agricultural technology, biogas technology
27.	Candles in different shapes from Nainital
28.	Energy efficient drives for irrigation
29.	Farm implements and machinery
30.	Forest nursery practices
31.	Improved technology adoption
32.	Low cost agriculture based products
33.	Low cost solar voltaic system
34.	Non smoking chulha
35.	Pottery
36.	Recent rural agricultural technology, production technology, management practices
37.	Rural dairy / poultry farming practices of low input - low output and / or medium input - medium output systems for improving rural economy in the country of their origin
38.	Rural technology rabri making, khudda making, antique pieces and other furnishing materials
39.	Rural technology regarding water conservation practices

S.N.	Important Rural items / services
40.	Seed production technology, Vermicomposting
41.	Services (professional)
42.	Traditional knowledge about floras, weather parameters
43.	Traditional rural knitting work, traditional products technology
44.	Traditional and rural knowledge with respect to fisheries
45.	Wax candles
III	Indian music, Folk dance, Drama
46.	Folk culture particularly Garba
47.	Folk dance, drama and music
48.	Garhu Ras and Dandia
49.	Indian music, Harinyanvi music, Malayalam music and songs
50.	Local made musical instruments
51.	Traditional art like Kathakali, dance, theyyam
IV	Indigenous fruits, vegetables, flowers, plantation crops, spices, aromatic and medicinal plants and their varieties
52.	Alphonso mango and processed fruit products
53.	Aromatic and medicinal plants
54.	Ayurvedic and herbal medicine
55.	Coconut, cashew nut, tea, spices, ginger and turmeric, tobacco, chili, flowers
56.	Fruits of <u>Embllica officinales</u> , Litchi, Oranges
57.	Rice, groundnut
58.	Kangra tea
59.	Makhana, Rye
60.	Local fruit like kokum, jamun, karonda
61.	Mango and its varieties
62.	Mushroom production and processed products
63.	Native germplasm
64.	Ayurvedic and herbal products
65.	Products of post harvest technology in fruits such as guava, ber
66.	Traditional utilized fruits and vegetables
67.	Vanilla cultivation / production and products
68.	Vegetable processing and export, horticultural crops
V	Paintings
69.	Decorative pieces and paintings
70.	Face masks and painting of Kath kali
71.	Hand paintings, Kangra painting, Mithila paintings, paintings of Ajanta and Ellora
72.	Piehhavai-wall paintings, traditional tribal costumes
73.	Sculptures and paintings of elephant, spotted deer
VI	Rural niche products
74.	Agricultural products
75.	Coir and mat products
76.	Forest products
77.	Bamboo products
78.	Jaggery
VII	Food items and processed foods

S.N.	Important Rural items / services
79.	Ethnic food, sweets
80.	Food / spice products, namkeen
81.	Non conventional food products
82.	Processed fruit products, fresh fruits, food processing technologies
83.	Processed items like pickles, papads, mango jelly
84.	Sea food products
85.	Under utilized foods
VIII	Textiles, embroidery
86.	Caps, carpets
87.	Embroidery, Needle work
88.	Hand woven shawls, caps, socks
89.	Handloom clothes, dress material
90.	Himachali garments, shawls, caps, carpet etc.
91.	Khadi embroidered clothes and other artifacts
92.	Kullu shawls
93.	Kutchi dresses
94.	Odhani (embroidered head cloth)
95.	Paithani and Himroo silk items
96.	Patch work for bed covers, pillows and wall piece etc.
97.	Sambalpur saree, sari paithani
98.	Silk saris and garments, tassar silk clothes
99.	Terracotta
100.	Textile, traditional embroidery liners
101.	Traditional dyed and printed texture material (natural dyed)
102.	Woolen clothes / materials shawls, sweaters
103.	Leather goods, traditional foot wear
IX	Animal and animal products
104.	Deoni cattle breed to be exports to developing countries
105.	Traditional meat and milk products
106.	Traditional up-graded, value-added, delicious livestock processed products
107.	Export of livestock products
108.	Honey
109.	Low cost feeds for animals
X	Natural products
110.	Diamonds
111.	Display items of marble
112.	Natural dye products
113.	Pearls
XI	Rural services
114.	Eco tourism

Annex 7.2: List of disciplines in various faculties in which generally students are going abroad along with number and percent of responses received from faculty members in AUs

Discipline	N	%	Discipline	N	%
Crop Science			Animal Science		
Biotechnology (Agricultural Science)	347	26.17	Veterinary Microbiology, Vet. Bacteriology, Vet. Virology, Immunology	78	16.7
Plant Breeding	313	23.6	Animal Science	51	10.92
Microbiology (Agriculture)	113	8.52	Veterinary Medicine	38	8.14
Agricultural Entomology	108	8.14	Dairy technology	37	7.92
Biochemistry (Plant Science)	96	7.24	Animal Genetics and Breeding	33	7.07
Plant Pathology	96	7.24	Animal Nutrition	29	6.21
Genetics and Cytogenetics	70	5.28	Biotechnology (Animal Science)	24	5.14
Agriculture	54	4.07	Veterinary Pharmacology and Vet. Toxicology	24	5.14
Plant Physiology	47	3.54	Livestock Production and Management	21	4.5
Economic Botany	34	2.56	Animal Reproduction/ Gynecology	16	3.43
Plant Protection	27	2.04	Veterinary Surgery	15	3.21
Agricultural Chemistry	10	0.75	Livestock Products Technology	14	3
Seed Technology	8	0.6	Veterinary Pathology	14	3
Agricultural Meteorology	2	0.15	Dairy Microbiology and Dairy Biotechnology	14	3
Nematology	1	0.08	Dairy Chemistry	12	2.57
Total	1326	43.4	Veterinary Public Health/ Epidemiology	10	2.14
Agricultural Engineering and Technology			Animal Physiology	9	1.93
Agricultural structures and process engineering	157	42.43	Biochemistry (Animal Science)	8	1.71
Soil and water conservation Engineering	62	16.76	Poultry Science	6	1.28
Farm Power and machinery	53	14.32	Dairy Engineering	5	1.07
Computer application in Agriculture	45	12.16	Veterinary Parasitology	4	0.86
Food engineering	19	5.14	Veterinary Anatomy	4	0.86
Bio energy including renewable energy sources	9	2.43	Dairy economics	1	0.21
Physics/ Agril. Physics	9	2.43	Total	467	15.29
Electronic and Instrumentation	8	2.16	Natural Resources Management		
Electrical engineering	4	1.08	Agronomy	164	52.9
Mechanical engineering	3	0.81	Soil Science	69	22.26
Chemical engineering.	1	0.27	Soil Sciences- Soil Physics /Soil and Water Conservation	20	6.45
Total	370	12.11	Forestry	15	4.84
Social Sciences			Soil and Water Management	12	3.87
Agricultural economics	52	33.33	Soil Sciences-Soil Chem./Fert. /Microbiology	11	3.55
Management studies	35	22.44	Environmental science	9	2.9
Agricultural extension	24	15.38	Sustainable Agriculture/ Natural Resource management	5	1.61
Agribusiness	19	12.18	Agro forestry	4	1.29
Sociology	10	6.41	Soil Science- Pedology	1	0.32
Agricultural marketing	7	4.49	Total	310	10.15

Discipline	N	%	Discipline	N	%
Home Science Extension	5	3.21	Fisheries		
Agricultural Statistics	4	2.56	Aquaculture	13	24.07
Total	156	5.11	Fisheries Sciences/ Fish Environment /Fish IT/FL	10	18.52
Agriculture Education (HRD)			Fish Genetics and Biotechnology	8	14.81
Food and Nutrition	118	69.41	Fish Microbiology/Fish Pathology	8	14.81
Home Management/ Family Resource Management	27	15.88	Fish Nutrition and Biochemistry	6	11.11
Child Development	10	5.88	Fish Processing technology	4	7.41
Textile and Clothing	7	4.12	Fisheries resource management	3	5.56
Home science	6	3.53	Fisheries Biology	1	1.85
Fashion technology	2	1.18	Fish Breeding and Hatchery Management	1	1.85
Total	170	5.56	Total	54	1.77
Horticulture			Non agricultural sciences		
Horticulture	93	73.23	Basic Sciences	32	42.67
Post Harvest Technology	17	13.39	Medical Science	13	17.33
Horticulture (Floriculture)	8	6.3	Remote Sensing	11	14.67
Horticulture (Vegetable Science)	7	5.51	Bio informatics	10	13.33
Horticulture (Fruit Science)	2	1.57	Quality control and Quality assurance	7	9.33
Total	127	4.16	Wild life	2	2.67
			Total	75	2.45

Annex 8.1: The list of foreign universities as suggested by HoDs for joint program or twinning program

S. N.	Foreign Universities
1.	Addis Ababa University, Ethiopia
2.	Adelaide State University, Australia
3.	Agricultural University, Japan
4.	Agricultural University, Wageningen, The Netherlands
5.	Agriculture University, Malaysia
6.	Alabama University. Alabama, USA
7.	Alemaya University, Ethiopia
8.	ARS, Northern Crop Science Lab, Fargo, US
9.	Asian Institute of Technology, Thailand
10.	Asian Vegetable Research and Development Centre, Taiwan
11.	Asmara University, Ethiopia, Africa
12.	Asute University Asute, Egypt
13.	Auburn University, USA
14.	Australian National University
15.	Bangladesh Agricultural University, Dhaka
16.	Bangladesh Research Institute, Dhaka
17.	Ben-Gurion University of the Neger, Sede - Boker Campus, 84990, Israel
18.	Boston University, USA
19.	British Royal college of veterinary sciences, London
20.	Cairo University, Egypt
21.	California Polytechnic State University
22.	California State University, USA
23.	Cambridge University, UK
24.	Canadian Institute of Food Science and Technology
25.	Case Western Reserve University, Ohio, USA
26.	Catholic University, Belgium
27.	CEVAP, Brazil
28.	Chinese Academy of Agricultural Sciences, China
29.	Chinese Academy of Science, China
30.	Chinese University, Hong Kong
31.	CIMMYT, Mexico
32.	Clemson University, USA
33.	College of Veterinary Medicine, Uppsala, Sweden
34.	College of Veterinary Medicine, Utrecht, Holland
35.	Colorado State University, Fort Collins (USA)
36.	Cornell University, Ithaca, NY, USA
37.	CSIRO, Australia
38.	Dalhousie University, Canada
39.	Danish Govt. Institute of seed pathology for developing countries DK-2900 Hellerup, Copenhagen, Denmark
40.	Danish Institute for Fisheries Technology and Aquaculture

S. N.	Foreign Universities
41.	Deakin University, Australia
42.	Department of Veterinary Medicine, University of Agriculture, Faisalabad, Pakistan
43.	Edinburgh University, England
44.	Federal Dairy Research Centre, Germany
45.	Fisheries Institute, Netherlands
46.	Fisheries Institute, UK
47.	Florida University, USA
48.	George August University of Gottingen, Germany
49.	George Washington University, USA
50.	Georgia State University, USA
51.	Glasshouse Research Station, Netherlands
52.	Hangzhou University, China
53.	Harvard University, USA
54.	Hebrew University of Jerusalem, Rehov of Israel
55.	Huazhong Baldwin Agricultural Cal USA
56.	Hybrid Rice Research Institute, China
57.	ICARDA, Syria
58.	ICRAF, Kenya
59.	IDRC, Canada
60.	IFDC, muscle shoals, Alabama, USA
61.	IFPRI
62.	IFTC, China
63.	IGER, UK
64.	IITA, IRRI
65.	IITA, Nigeria
66.	Illinois State University, USA
67.	Institute of Vegetables and flowers, Beijing, China
68.	Institute for Policy and Social Sciences Research, University of New Hampshire, USA
69.	Institute of Agricultural engineering, the volcanic centre, Bet Dagan, Israel
70.	Institute of Agriculture, Scotland, UK
71.	Institute of Agronomy and Plant breeding, University of Gottingen, Germany
72.	Institute of Animal Health, Pirbright, UK
73.	Institute of Food Research, Norwich, UK
74.	Institute of Plant nutrition and soil science, Germany
75.	Institute of Soil Science, California
76.	International Agriculture Center, Netherlands
77.	International centre for Insect physiology and ecology, Nairobi, Kenya
78.	International Institute for Land Reclamation and Improvement, Netherlands
79.	International Institute for Tropical Agriculture Ibadan, Nigeria
80.	International Irrigation Center, Utah, USA
81.	International Livestock Research Institute (ILRI), Ethiopia
82.	International Rice Research Institute, Manila
83.	Iowa State University, USA

S. N.	Foreign Universities
84.	IRRI, CIMMYT
85.	Israel Institute of Technology - Technion, Haifa
86.	IWMI, Srilanka
87.	James Cook University, Australia
88.	Jerusalem University, Israel
89.	Kabul University, Afghanistan
90.	Kansas State University, Manhattan USA
91.	Katholieke University, Leewen, Belgium
92.	Korea Research Institute of Bio-Science and Biotechnology, Korea
93.	Kyoto University Japan
94.	Lab of Bio energetics, University of Geneva, Switzerland
95.	Lau Baugh University, London
96.	Lincoln University New Zealand
97.	Liverpool University, UK
98.	Loughborough University, UK
99.	Louisiana state University, USA
100.	Lund University Department of Animal Nutrition, Sweden
101.	Mac master University, Canada
102.	Martin Luther University, Wittenberg, Germany
103.	Maryland School of Veterinary Medicine, USA
104.	Massachusetts College of Pharmacy and Health Sciences, USA
105.	Massey University, Auckland, NZ
106.	Mc Gill University, Canada
107.	Melbourne Institute of Technology
108.	Michigan State University, East Lansing, USA
109.	Ministry of Agricultural and Rural Development Centre for International Agricultural Development Cooperation, Israel
110.	Mississippi State University, Mississippi, USA
111.	Missouri University, USA
112.	MIT (Sloan School of Management)
113.	MITS, USA
114.	Moredun Research Institute, Edinburgh, UK
115.	Moscow University, Russia
116.	Mousson University, France
117.	Multimedia University, Cyberjaya Campus, Malaysia
118.	Murdoch university, Australia
119.	National Center for Foreign Animal Disease, Canada
120.	National Chungshing University Taiwan
121.	National Institute of Health, USA
122.	National Institute of Vegetable, Ornamental Plant and Tea, NIVOT, Japan
123.	National Renewable Energy Laboratory (NREL) USA
124.	National University, Singapore
125.	NAU, China
126.	Nepal Central University, Kathmandu

S. N.	Foreign Universities
127.	New Zealand Dairy Research Institute, New Zealand
128.	NFRI, Japan
129.	North Atlantic fisheries college, Scotland, UK
130.	North Carolina State University, California
131.	North Dakota State University USA,
132.	Norway Institute of Fishery Technology Research
133.	NRC, Canada
134.	O.F.F.Centre, Wuxi, China
135.	Ohio State University, USA
136.	Okayama University, Tsushimanaka, Okayama-700, Japan
137.	Oklahoma University, US
138.	Oregon State University USA
139.	Osaka Kyoiku University, Osaka, Japan
140.	Oxford University, UK
141.	Pakistan Council of Agricultural Research
142.	Pennington Biomedical Research center, IA, USA
143.	Pennsylvania state agricultural University, USA
144.	Pilbright Institute, UK
145.	PSI University, Kahramanmaras, Turkey
146.	Purdue University, USA
147.	Qing Dao, University of China
148.	Queen's University Belfast, UK
149.	Reading University, London, UK
150.	Research station Saskatoon, Canada
151.	RMIT, University, Australia
152.	Roslin Institute, Scotland UK
153.	Rothamsted Experimental Station, UK
154.	Rowett Research Institute, Aberdeen, Scotland
155.	Royal Institute of Agricultural Technology, Netherlands
156.	Royal University of Bhutan, Faculty of Animal Husbandry, NRTI, Lobesa
157.	Rutgers University, USA
158.	School of Biological sciences, University of Sussex, Fulmer, Brighton, Sussex, UK
159.	Scottish Agricultural University, UK
160.	Shanghai fisheries University, China
161.	Silsoe University, UK
162.	South Carolina University, USA
163.	South Dakota University, USA
164.	South West Agricultural University of China Faculty of Agricultural
165.	Stanford University USA
166.	State University at Albany, New York
167.	Sterling University Scotland, UK
168.	Swedish University of Agricultural Sciences, Sweden
169.	Swiss Federal Institute of Technology ETH Zentrum CH 8092, 2 Zurich, Switzerland

S. N.	Foreign Universities
170.	Sydney University, Australia
171.	Syracuse University, USA
172.	Technical University, Berlin
173.	Tehran University, Iran
174.	Temple University, Philadelphia, USA
175.	Texas A and M University, Agricultural Experiment Station, Dallas, USA
176.	Texas Tech University, Lubbock, Texas
177.	The Norwegian College of Fisheries Science, University of Tromso (Norway)
178.	The Ohio State University, Columbus, Ohio
179.	The University of Queensland, St.Lucia, Australia
180.	Toronto University, Canada
181.	Tribhuvan University, Kathmandu
182.	Tropical Soil Biology and fertility programme, Kenya
183.	Tufts University
184.	UBC, Canada
185.	UNAM, Mexico
186.	UNESCO Institute of Statistics, Montreal Canada
187.	University at Beijing, China
188.	University College Cork, UK
189.	University of Aachen, Aachen, Germany
190.	University of Agricultural Sciences, Australia
191.	University of Agricultural sciences, Singapore
192.	University of Agriculture, Ethiopia
193.	University of Agriculture, Holland
194.	University of Agriculture, Israel
195.	University of Arizona Tucson, USA
196.	University of Bangkok, Thailand
197.	University of Basel, Switzerland
198.	University of Birmingham, UK
199.	University of Canterbury, Naumai, New Zealand
200.	University of Cape town
201.	University of Colombo, Sri Lanka
202.	University of Connecticut, USA
203.	University of Cornell, USA
204.	University of Craiova, Faculty of Horticulture, Romania
205.	University of Davis, California, USA
206.	University of Denmark
207.	University of Dortmund, Germany
208.	University of Dubai, UAE
209.	University of East Anglia, Norwich, UK
210.	University of Florida, USA
211.	University of Ghent, Belgium, Europe
212.	University of Glasgow, Glasgow, UK
213.	University of Glasgow, UK

S. N.	Foreign Universities
214.	University of Guelph, Canada
215.	University of Harvard, USA
216.	University of Hawaii, Honolulu Community College, HI, US
217.	University of Hohenheim, Germany
218.	University of Hull, UK
219.	University of Iceland
220.	University of Laval, Canada
221.	University of Leeds, UK
222.	University of Leicester, UK
223.	University of Malaya, Malaysia
224.	University of Manitoba, Canada
225.	University of Maryland, College park, USA
226.	University of Melbourne, Australia
227.	University of Milburn, Australia
228.	University of Minnesota, St. Paul Minneapolis, USA
229.	University of Nanyang, Singapore
230.	University of Nebraska-Lincoln, USA
231.	University of Nottingham, UK
232.	University of Padua, Italy
233.	University of Philippines, Los Banos
234.	University of Portsmouth UK
235.	University of Saskatchewan, Saskatoon Canada
236.	University of South Pacific, Fiji
237.	University of Templeton, USA
238.	University of Tennessee, USA
239.	University of Tokyo, Japan
240.	University of Twente, Netherlands
241.	University of Utrecht, Netherlands
242.	University of Virginia Technology, USA
243.	University of Wales, Aberystwryth, UK
244.	University of Washington, USA
245.	University of Western Australia
246.	University of Western Sydney, Australia
247.	University of Wisconsin, Madison, USA
248.	University of York, USA
249.	University Utara Malaysia, Serdang
250.	USDA
251.	Utah State Agricultural University
252.	Veterinary Faculty, University of Uncu Yil, Van-Turkey
253.	World Fish Centre, Penang, Malaysia

Annex 8.2: List of Alumni/NRI/PIO/Professors abroad who can help in establishment of commercial presence abroad- as quoted by HODs and Faculty members of AUs

S. N.	Alumni/NRI/PIO/Professors
1.	A Mohan Kumar, University of Michigan State University,
2.	Bikram, S. Gill, Dept. of Plant Pathology, Kansas State University, Kansas
3.	BS Ahluwalia, International Atomic Energy Agency, Austria
4.	D.Lepautre Geosys, France
5.	Derek elements croome, Prof. of construction Engineering School of construction, UK
6.	DL Iva, Depts. of Zoology and Entomology, University of Queens Land, Australia
7.	Dr Har Sarup Singh, Former VC HAU (Residence USA)
8.	Dr M.M. Kale, Australia
9.	Dr (Mrs.) Mary P. Andrews, Director, International Women Center, Michigan State University, USA
10.	Dr. GP Georghion, USA
11.	Dr. (Mrs.) Usha Chowdhary, USA
12.	Dr. (Ms) Snehalata Mathur (Plant Pathology) at Aggasiz, British Columbia
13.	Dr. A. W. Khan, UNESCO, Paris (France)
14.	Dr. A A Kader In California State University
15.	Dr. AG Sawant, Ex Vice Chancellor of Dr. BKKV
16.	Dr. Ajai Singh, California University
17.	Dr. Ajay Singh, Canada
18.	Dr. Ajit srivastava, Professor and Head, Michigan state university, USA
19.	Dr. A K Agg Pennsylvania, USA
20.	Dr. AK Reddy, CIFE
21.	Dr. A K S Huda, Agrodimatologist, School of Environment and Agriculture, Hawke bury Campus, K29 Building, University of Western Sydney, Locked Bag 1797, Penrith South DC, NSW 1797, Australia,
22.	Dr. A M Shrivastava, Retired Prof. and Head, Anatomy, JNKVV, Jabalpur
23.	Dr. Amdhuri Sharma, International University of Singapore, Singapore
24.	Dr. Amit Rai, President, IFDC, Muscle Shoals, USA
25.	Dr. Amrut Patel, Saskatoon University, Canada
26.	Dr.Andres wiemken, Inst.Botanische, University of Basel, Switzerland
27.	Dr. Anita Singh, Toronto, Canada
28.	Dr. Anjan Reddy Wisconsin
29.	Dr.V.Gangadhar Rao, Ohio
30.	Dr. Anupam Bai - Colombia
31.	Dr. A P Tyagi, Fiji
32.	Dr. Arun Goyal, Director, Biotechnology, University of The SSE, USA
33.	Dr. Ashima, USA
34.	Dr.Ashok Khare, Professor, University of Reading, UK
35.	Dr. Awil SS, University of Minnesota
36.	Dr. B Orskov, Rowett Res. Institute, UK
37.	Dr. B. B. Singh, Chief scientist, Pulses, IITA, Nigeria
38.	Dr. B. Subramanyam, Professor, Grain Food and Feed Technology, Kansas State University, USA
39.	Dr. Baboo Nair, Rt. Professor of Human Nutrition, Lund University, Sweden
40.	Dr. Barbara Jahnsen, Facilities Manager, Prairiea view, A and M University

S. N.	Alumni/NRI/PIO/Professors
41.	Dr.B D Sharda, Department of Sociology, University of Utah, USA
42.	Dr.Bension Perelman, Shefayin Israel
43.	Dr.Bernee Dell, Murdoch University, Australia
44.	Dr.BH Jansser, Wageningen Agricultural University, Netherlands
45.	Dr.Binayak Mohanty, US Salinity Laboratory, CA, Email: bmohanty@usssl.ars.usda.gov, Associate Professor, Texas, USA
46.	Dr. Bir B. Singh, Cowpea breeder, IITA, Nigeria
47.	Dr. B L Mahashwan, Professor, USA, Sydney, Australia
48.	Dr. B N Patel, Mississippi State University, Mississippi
49.	Dr. Brar, IRRI, Philippines
50.	Dr. Bruce Babcock, Iowa State University
51.	Dr. BS Patel, Faculty, Horticulturist, Illinois
52.	Dr. C. Ramachandran, Assistant. Professor, Dept. of Botany, Florida International University, USA
53.	Dr.CA Reddy, Professor, Michigan State University
54.	Dr. Cathesive W. Erust, MSU, USA
55.	Dr. Chong M.Lee, Professor, University Rhode Island
56.	Dr. Chong Sinsit, University of Wisconsin-Madison, USA
57.	Dr. Chris Garforth, Prof, University of Reading, UK
58.	Dr. D. Jaya, Vice president for research, University of Manitoba, Canada
59.	Dr. D.V.S.Jayas, Professor, Dept. of Biological sciences, University of Manitoba
60.	Dr. David O Harsen, Associate Dean and Director, College of Food, Agricultural and Environmental Science, Ohio State University, USA
61.	Dr. DD Shukla, Australia
62.	Dr. Deepak Deshpande, Wake Forest University, USA
63.	Dr. Digambar Mishra, NRI, USA
64.	Dr. Dilbagh Singh Jayas, Vice Chairman (Res.) University of Manitoba, Canada
65.	Dr. Dilip Kumar, FAO team leader, Bangladesh
66.	Dr. DJ Mackill Plant Breeder and Head, PBGB, IRRI, Manila, Philippines
67.	Dr. DJ Raski, Professor (Retd.), California
68.	Dr. DN Tripathi, UIV, Illinois
69.	Dr. DPS Verma, Professor, Centre for Biotechnology, OSU, Columbus, Ohio, USA
70.	Dr. DS Virk, Consultant, DFID, CAZS
71.	Dr. Egan, Australia
72.	Dr. EH Rogers, Ithaca IOWA State USA
73.	Dr. Francille Firebough, Dean on special duty, Ohio state University, Ohio, USA
74.	Dr. Fumio Matsumura, Michigan State University, USA
75.	Dr. G Rajashekar, UIUC
76.	Dr. Ganesh kumar, Ex Professor of Horticulture, Pantnagar
77.	Dr. Gita Chenia, Organ State University,
78.	Dr. Gopal Reddy Tuskegee University
79.	Dr. Gorishanker Mital, prof Food Engineering University of Guelph, Ant aria Canada
80.	Dr.Govind Sharma, Alabama University, USA
81.	Dr. GP Georghious, California
82.	Dr. Graig Peurson University of Guelph, Canada
83.	Dr. GS Khush, IRRI Philippines
84.	Dr. GS Mitta, Prof. School of Engineering University of Guelph, Canada
85.	Dr. GSV Raghvan, Mc Gill University Canada

S. N.	Alumni/NRI/PIO/Professors
86.	Dr. GT Gujjar, Pr. Scientist, IARI, New Delhi
87.	Dr. H. Dobson, University of Liverpool, UK
88.	Dr. H.S. Chauhan, Emirates professor
89.	Dr. Hagan, Adam State College, Colorado State University
90.	Dr. Hari hara Ram, Prof and Head, GBPUAT, Pantnagar
91.	Dr. HC Sharma, Purdue University, USA
92.	Dr. HG Parsa, Ass. Prof. OSU, Columbus
93.	Dr. HK Jain, Kentucky, USA
94.	Dr. HK Pradhan, IVRI
95.	Dr. Homywidz, Illinois, USA
96.	Dr. HPS Makkar, Australia
97.	Dr. HR Pappu, University of Georgia, USA
98.	Dr. HS Pooni, University of Birmingham, UK
99.	Dr. I.P. Bharti, Dept. of Agricultural Economics, University of South Pacific, Fiji
100.	Dr. IA Siddiqi, Crop Life America, 1156, 18th Str., NW Suit 49, WDC 20005
101.	Dr. IS Sheoran, University of Saskatchewan, Canada
102.	Dr. J. Abraham, Retd. Director, Centre of Excellence in Meat Science and Tech., KAU, Mannuthy
103.	Dr. J.P. Tiwari, Prof, Plant science, University of Alberta, Edmonton, Canada
104.	Dr. Jeewan in University of Wisconsin
105.	Dr. John F, Lerslez
106.	Dr. John Merurig, Iowa State University
107.	Dr. John Walker, Professor of Animal Science, Texas, A&M University
108.	Dr. Jose S., Associate Professor, University of Florida, USA
109.	Dr. JP Dubey, Microbiologist, USDA, USA
110.	Dr. JP Fontenot, Virginia
111.	Dr. JR Patel, California State University USA
112.	Dr. JS Kanwar Utah State University
113.	Dr. K Kumanan, Cornell University, Ithaca
114.	Dr. K. Ramaswamy, College of Medicine, University of Illinois
115.	Dr. K. Sena, IRRI, Philippines
116.	Dr. K. V. Peter, VC, KAU, Thrissur
117.	Dr. K. Venugopal, UK
118.	Dr. KA Allapay, KAU
119.	Dr. Kamala Singh (San Diego) USA
120.	Dr. Kanwar Singh, ISU, USA
121.	Dr. Kasim Maredia, Michigan State University, USA
122.	Dr. KC Behmke, KSU, USA
123.	Dr. Kee-Chai Chong, Programme Coordinator, Box of Bengal Programme, Chennai, TN
124.	Dr. Keith H. Haywood, International Fisheries Institute of University of Hull, Hull, UK
125.	Dr. Ketan M Doshi, University of Lethbridge, Canada
126.	Dr. Khageswar Pradhan, OUAT
127.	Dr. Kini R. Manjunatha, Dept. of Biological Science, National University of Singapore
128.	Dr. KP Singh, Dept. of Bio Statistics, School of Public Health, University of North Texas Health Sc. Centre, Texas, USA
129.	Dr. KS Sakhon (Visiting Professor in Canada)
130.	Dr. Kym Irving, QUT, Australia
131.	Dr. Lallan Rai, Ex-Director, IASc, BHU

S. N.	Alumni/NRI/PIO/Professors
132.	Dr. Leena Anil, University of Minnerta
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146.	Dr. Manjit Mishra, South Dakota State University,
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160.	Dr. MR Patel, X Principal of College of Veterinary Science and AH. , Anand
161.	Dr. Mrinal Bhave, University of Queensland, Australia
162.	Dr. MS Babel, Professor, AIT, Bangkok, Thailand
163.	Dr. Nagaraja, Professor of Pathobiology, Kansas State University USA
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170.	Dr. Nihar Raju Nayak, Stanford University, USA
171.	Dr.NK Singh, Prof. Abebbern University, USA
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173.	Dr.OD Karor, Inst. of Higher Studies, Bulgaria
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204.	Dr. RC Agarwal, Tech. University of Berlus
205.	Dr. RC Chaudharj, Myanmar
206.	Dr. RD Siyla, California
207.	Dr. Revthi Balakrishnan, FAO, Bangkok
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209.	Dr. RJ Roberts, Ex Director, Institute of Aquaculture, UK
210.	Dr. RK Singh, Ex IRRI Liaison Officer, Former IRRI Representative of India
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212.	Dr. RL Kushwaha, Professor, Canada
213.	Dr. RM Patel, Retd. Professor, AAU, Anand
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217.	Dr. RP Saxeena, Prof. Department of Agricultural Engineering, College of Agriculture, University of Asmara, Eritrea Post Box - 1220
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224.	Dr. S.K. Bowrey, Nairobi
225.	Dr. S.P. Pachuri,Ex Professor and Head
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233.	Dr. Salasar, Adam State College, Colorado State University
234.	Dr. Salunkhe,Agricultural university, Thailand, Bangkok
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250.	Dr.Shyam S. Goel, Department of Agronomy, University of California, DAVIS, USA
251.	Dr.Simon Oosting, Netherlands
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257.	Dr. SN Singh, 611, Hurlaw, KY, USA
258.	Dr. SN Tawade, St. George University, Granada (UK)
259.	Dr. SP Singh, Professor of Agri Business and Agricultural Economics, USA
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297.	E. Van Ranst, University of Ghent, Belgium, Europe
298.	Eigenmann, JE, University of Pennsylvania, Philadelphia
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300.	Gary W. Ethison University of Florida, Gaines Ville, Florida
301.	Girish Patel, National research Council of Canada
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305.	James Bondrant, USA, California
306.	Janie Jiggim, Visiting Professor, University of Guelph, Canada
307.	Kaushik Basu, Cornell University
308.	Layle D.Lawrance, West Virginia University Mongantown, USA
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313.	Mr. Anirudh Joshi, Company Executive, Florida, USA
314.	Mr. Vivek Upadyay, University College Carh Ireland
315.	Mr. Worlds Mamo - Govt. of Ethiopia
316.	Mrs. Gail Young, Register, Royal Agricultural College, Cirencester, UK
317.	Mrs. Poonam Kumar Administrator clinics, Slough London
318.	MW Minrms, USA
319.	Narash Magan - Crane field Institute of Technology, UK
320.	Nitinkant Kapoor, USA
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325.	Paul finglas, SRS Institute of Food Research
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327.	Peter Mudwell, University of Dortmund
328.	Peter R Hubbs, CIMMYT regional Reprehensive for South Asia and Facilitator, NASC, PUSA, New Delhi
329.	PF Fox, Ireland
330.	Pranus Budhan, California University,
331.	Prof MC Mohan Dairy Res. Centre, USA
332.	Prof Natrajan, KSU, USA
333.	Prof. AFG Dixon, University of East Anglia, UK
334.	Prof. Jensen Johnson, Auburan University (AI) America
335.	Prof. PN Patil, College of Pharmacy, Ohio State University Columbus, USA
336.	Prof. A.C.Ackello Ogotab, Nairobi university
337.	Prof. A.Raghu, TNAU, Coimbatore
338.	Prof. Ahmad - Ex. VC SKUAST and Present VC of Ham University
339.	Prof. Alvarez, OSU, USA
340.	Prof. Anwar-ul-Islam, University of Dhaka, Bangladesh
341.	Prof. AS Bari, Dept of Veterinary Parasitology, Bangladesh Agricultural University Dhaka
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371.	Prof. J.Hinrichs, University of Hohenheim, Stuttgart
372.	Prof. JH Lieth, UC Davis, CA, USA
373.	Prof. Jim Fast, Clemson University, USA
374.	Prof. JK Ghosh, Purdue University, USA
375.	Prof. JS Heslop-Harrison, University of Leicester, UK
376.	Prof. Karim Meredia, MSU, USA
377.	Prof. Kartik Roy, University of Queens land Australia,
378.	Prof. KL Arora, USA
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380.	Prof. Kushy K, University of South Pacific, Fiji
381.	Prof. Leo Brunbeng, Dean, Faculty of Veterinary Medicine, Free University, Berlin, Germany
382.	Prof. Loug Yuan Ping, China
383.	Prof. M.S. Swami Nathan, India
384.	Prof. Mansel Griffith, Chair, University of Guelph, Canada
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390.	Prof. P.Singh,Podis ababa, Ethiopia
391.	Prof. Paul Kitchins, Winnipes, Canada
392.	Prof. Paul Watson, Prof. of Gynobiology, Depts. Veterinary Basic Survey
393.	Prof. Purmoda Vasarada, University of Wisconsin River Falls, USA
394.	Prof. PV Krishnamurthy, Madras University
395.	Prof. R.Akkina Chilarado State University, USA
396.	Prof. Ram kishore, Brazil (IMPE)
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405.	Prof. S Komazaki, National Institute of Fruit Tree Science, Japan
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407.	Prof. Sampat Yapa, University of Colombo, Sri Lanka
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420.	Prof. VP Singh, Louisiana State University, USA
421.	Prof. W.A.Phillips, Canadian Agricultural University, Canada
422.	Prof. W.Baner, Tuniversity of Munchen
423.	Prof. W. Holtz, University of Gottingen, Germany
424.	Prof. WG Hills Edinburgh University, UK
425.	Prof. William Miller, USA
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428.	Rameswara, Rtd. Professor, RAU, Hyderabad
429.	Robert Blake, Cornell University
430.	Robert D. Steele, Pennsylvania State University, USA
431.	Ronald E Ostman, Professor, University of Syramse
432.	Ryerson Polytechnic University, Canada, Head, ECE Division
433.	Sanjay Singh, Asst. Prof., University of California, Dept. of Food and Agricultural Engineering
434.	Sharon Hein, University of California
435.	Shri. Animon, M.M., Ph.D. Scholar, University of Wales, UK
436.	Shri. Shibn Jose, Assoc. Professor, UFL, Florida

Annex 10.1: Brainstorming session on GATS and Strategic Issues in Higher Agricultural Education

Date of Brainstorming: 15.6.2005
AU: ANGRAU, Hyderabad

STRATEGIC ISSUE NO.04

NAMES OF GROUP MEMBERS:

Dr G.V. Subbarathnam
Dr B Kala Kumar
Dr A Ananda Kumar
Dr D. Thammi Raju

- ✎ Strengthening of infrastructure facilities in respect of education and living
- ✎ Consumer/client based curriculum development
- ✎ Establishment of centers of excellence
- ✎ Improvement of standard of education on par with developed nations
- ✎ Pooling of competent faculty in selected areas in standard universities
- ✎ Refresher/advance trainings for faculty periodically
- ✎ Wide publicity of standard institutions and their strengths
- ✎ Offering incentives/schemes
- ✎ Collaboration with other universities of advanced countries
- ✎ Liberalization of administrative procedures
- ✎ Establishing counseling centers
- ✎ Accreditation with International organizations
- ✎ ICAR-SAUs strong linkage system
- ✎ Creation of cordial and friendly environment
- ✎ More flow of financial assistance by the govt. to the identified institutions
- ✎ Incentives to the faculty based on the work-turned out/res. Projects that attract foreign students.

STRATEGIC ISSUE NO.5

NAMES OF GROUP MEMBERS:

Dr K Suhasini
Dr Y Radha
Dr G.P. Sunandini
Dr N. Nalini Kumar

- ✎ To give wide publicity through a) advertisements in different media including internet, b) opening of publicity centers – off-campus information centers, - consultancies etc. in the host nation c) adopting salesman strategies.
- ✎ Utilization of services available at host nations by using the facilities available at local universities and also the services of alumni working at foreign universities.
- ✎ To enter into MOUs at institutional and national level and maintain good relations
- ✎ Offering low-cost education to withstand competition with other nations
- ✎ Establishing institutions in developing countries by conducting pre survey to identify local needs.
- ✎ Scholarships, incentives, assistance ships may be offered to attract foreign students.
- ✎ Mutual exchange of faculty and students to have better understanding system of agricultural higher education.
- ✎ Inviting / participating in international events like seminars, workshops etc.

STRATEGIC ISSUE NO 6

NAMES OF GROUP MEMBERS:

Dr K Suhasini
Dr Y Radha
Dr G.P. Sunandini
Dr N. Nalini Kumar

For Preparedness:

- ✎ University should build up good infrastructure facilities and living conditions for students and faculty to improve the standards.
- ✎ Low cost education with competitive price along with simple and easy procedures for admissions based on common entrance examinations.
- ✎ Courses offered should be based on needs of foreign universities and students.
- ✎ Entering into MOUs.
- ✎ Establishment of counseling centers.

Regulatory Requirements:

- ✎ An apex body should be established to regulate the registration, entry, licensing and monitoring of the foreign universities.
- ✎ The body should see that the standards of education should be on par with the local universities.

Date of Brainstorming: 15.7.2005
AU: UPPDDU Veterinary University, Mathura

STRATEGIC ISSUE NO. 4

NAMES OF GROUP MEMBERS:

1. Dr M.P. Gupta
 2. Dr A.K. Jain
 3. Dr Sarvajeet Yadav
 4. Dr R.P. Pandey
 5. Dr Mani Ram
 6. Dr Rakesh Goyal
-

To attract foreign students bring about overall improvement in our system while doing so we should also consider their needs, whereas well equipped labs, libraries, infrastructure are basically needed we should have:

- Good quantity and quality of manpower
- Improved curriculum delivery system
- International validation of degree offered
- Boarding and lodging facilities with proper security facilities
- Well-equipped laboratories
- Providing better education and technology
- Fully trained faculty and staff
- Amendments in regulatory acts
- Providing scholarships/ fellowships for deserving candidates
- Teaching and research facilities in diversified fields

STRATEGIC ISSUE NO. 5

NAMES OF GROUP MEMBERS:

1. Dr S.D. Sharma
 2. Dr A.D. Agarwal
 3. Dr Aditya Kumar
 4. Dr K.C. Sharma
 5. Dr S.K. Bansal
 6. Dr Rakesh Goyal
-

- To develop education campus by Indian veterinary universities in foreign countries, especially in under developed and developing countries
- To have joint venture with foreign universities in developing and under developed countries, particularly in common areas of interest
- Establishment of veterinary franchise abroad including debut of at distant education programme
- Conservation of quality germplasm of native breeds and enabling it ready for export market especially in countries such as commercial venture are viable.

STRATEGIC ISSUE NO. 6

NAMES OF GROUP MEMBERS:

1. Dr M.P. Gupta
 2. Dr A.K. Jain
 3. Dr Mani Ram Singh
 4. Dr Sarvajeet Yadav
 5. Dr R. P. Pandey
-

It has been generally agreed that we are ill prepared due to

- Inadequate technical manpower
- Less equipped labs and hospitals
- Inadequate library facility

Remedial measures suggested are

- No reservation in technical manpower recruitment for universities
- Improving manpower status as per VCI recommendations
- Additional manpower recruitment for PG courses
- Improving lab and library facilities
- Improving notes and providing venue for overall personality development

Entry of foreign universities has adequate justifications and if at all it is permitted and implemented by VCI (majority opinion). As such nobody opined about the need for import of education, marketing system. Import of education is a welcome but it may have far reaching implications. Upgradation of existing education system and identification and rectification of bottlenecks should be done first to enable the existing system to compete at par basis. Deputing teachers to foreign system of education to work there may be considered as first step, the second is the manpower improvement – quantity and quality.

The Universities act and statutes as well as Government rules and regulations need to be amended suitably for the entry of foreign students in Indian universities.

Date of Brainstorming: 18.07.2005
AU: CSK-HPKV, Palampur

STRATEGIC ISSUE NO. 4

NAMES OF GROUP MEMBERS:

1. Dr S. Bhatia
 2. Dr Asha Bansal
 3. Ms. Anjali Sood
 4. Dr V.K. Gupta
 5. Dr R.S. Tilhan
-

1. Advertisement:
 - Through website brochures, newspapers, media,
 - Appointing agricultural officers,
 - Projection of geographical climatic advantages
 - Competent faculty
 - Good infrastructure and its maintenance
 - Strategic advertisement as for the need of the client countries
 - Performance based ranking
 - Earmarking seats for foreign students
 - Information regarding source of student financing
2. Developing new need based education programmes, crash courses
3. Improving quality of on-going teaching programme with thrust on practical trainings per international requirements
Regular up gradation or revamping the skill or knowledge of manpower
4. Financial strategy
Making fee structure viable
Appointment of competent authority
5. Prioritizing research areas
6. Collaboration with foreign universities/ institutes for exchange of faculty and students

STRATEGIC ISSUE NO. 5

NAMES OF GROUP MEMBERS:

1. Dr S. Bhateria
 2. Dr Asha Bansal
 3. Ms. Anjali Sood
 4. Dr V.K. Gupta
 5. Dr R.S. Tilhan
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1. Collaboration with foreign universities/ international institutes
 - Devising joint programmes
 - Joint ventures
 - Exchange of scientists/ Faculty
 - Exchange of students
2. Wide publicity through
 - Official representatives
 - Outsourcing
 - Projecting/ selling new/ specific/ innovative ideas
 - Contacts through alumni, NRIs
3. Establishment of model campuses in
 - States
 - Country
 - Developing countries
 - Developed countries
4. Identification of needy/target countries for establishment of foreign campus.

STRATEGIC ISSUE NO. 6

NAMES OF GROUP MEMBERS:

1. Dr B.C. Sood
 2. Dr J.C. Bhandari
 3. Dr V.K. Sood
 4. Dr Rajan Katoch
-

1. Regulatory requirements
 - At National/International level
 - Through Ministry concerned
2. Policy matters
 - Early visa norms
 - Proper advisory system
 - Simpler currency exchange mechanisms
 - Availability of Scholarships/funds
 - Proper approval from the government
 - Joint venture/Collaborations
 - Minimal political influence
 - Privilege for developing countries
 - Security for the foreign countries
3. Educational Standards
 - Educational standards at international level
 - Common course curriculum
 - Use of international language for communication
 - Faculty upgradation
 - Catchy/Vocational courses
4. Infrastructure
 - Establishment/development of infrastructure like buildings, hostels, labs etc, in accordance with international students
 - Recognition of university laboratories by certifying agencies to have concrete results

Date of Brainstorming: 12.08.2005
AU: NDRI, Karnal

STRATEGIC ISSUE NO. 4

NAMES OF GROUP MEMBERS:

1. Dr.K.K.Singhal
2. Dr(Mrs)A.Chhabra
3. Dr.Sahni
4. Dr.S.P.Agarwal
5. Dr .Rajput

Marketing: 1.Development of national as well as University/institute website. Website of individual may be allowed to attract the student.
2.Holding conference/workshop at other countries.
3.Publicity through man media.
4.Inviting foreign consulates to university/institute.
5.Online facility for payment of fee etc.
6.Circular to foreign universities.
7.Tie-up with foreign university.
8.Separate counter at Indian Trade Fairs organized at other countries.

Institute/university

- 1.Credibility
- 2.Course curriculum of International standard.
- 3.Advance training of Indian teachers.
- 4.Special course on Indian milk products and buffalo genome.

Financial security: Provide financial security to the international students by

- 1.Scholarships/fellowships.
- 2.Cost effecting fee structure
- 3.Work permit for limited hours per week to earn while learn
- 4.Job opportunities through international placements.

Providing infrastructure facilities of the international standards with regard to the following

1. Modernizing laboratory facilities to international standards.
2. Better boarding and lodging facilities.
3. Getting ISO-9001 accreditation.
4. Seperate international camps
5. Identifying institutes and strengthens them.

STRATEGIC ISSUE NO. 5

NAMES OF GROUP MEMBERS:

- 1.Dr.S.P.Agarwala, Head DE.
 - 2.Dr.Y.S.Rajput, HeadDC
-

- 1.ICAR should provide comprehensive information on dairy science subjects taught in Indian universities to foreign students through TV or other media
2. Seminars conducted in afro-asian countries highlighting our academic programmes on dairy science.
- 3.Hire consultants for promoting Indian universities abroad.

STRATEGIC ISSUE NO. 6

NAMES OF GROUP MEMBERS:

- 1.Dr.V.K.Batgi
- 2.Dr.V.K.Kans
- 3.Dr.M.K.Sharma
- 4.Dr.RM.Fulzala
- 5.Dr.J.C.Markande

-
- 1.The foreign university must be recognized and accredited in their own country.
 - 2.The foreign university must follow the norms laid by the ICAR/GOI.
 - 3.The main focus of the foreign university on creation of adequate job opportunities for the Indian students.
 - 4.There should be matching registration fee to avoid mushrooming.
 - 5The functioning of foreign universities should be under constant scrutiny by ICAR.

Date of Brainstorming: 26.08.2005
AU: CIFE, Mumbai

STRATEGIC ISSUE NO. 4

NAMES OF GROUP MEMBERS:

1. Dr Venkateswarlu
2. Dr Arpitha khanna
3. Dr..A.Vennilla
4. Dr.P.K.Pandey
5. Mrs.Asha landge
6. Dr.Geetanjali deshमुख
7. Dr.Aparna choudary

1. Infrastructure, Faculty & Syllabi strengthening:

- a. World class infrastructure & teaching & research facility.
- b. A very strong faculty, trained abroad, with international publications. Refresher courses for faculty recommended at regular intervals.
- c. Effective, up-to-date, comprehensive & practical oriented syllabi, in line with marketing demands, with provision for regular revisions.
- d. State of art teaching methods, focus on easy student – teacher interactions discussions.
- e. World-class logistics and amenities for foreign students, with provisions for games and extra curricular activities, health cares.

2. Publicity:

- a. Wide spread publicity through web, advertisements in various media, pamphlets, exhibitions, stalls in education/ book fairs, using faculty as ambassadors to various countries, providing information through embassies, using the institutions/ university alumni as ambassadors, projecting India as an interesting country to live in.

3. Student fellow ships / Loans

- a. Attracting students by offering loans and merit fellow ships.

4. Student welfare:

- a. Student counseling- on both career and personal issues
- b. Simpler admission procedures

STRATEGIC ISSUE NO. 5

NAMES OF GROUP MEMBERS:

1. Dr R.S Biradar
2. Dr.V P Sahu
3. Dr S Jagirdar
4. Dr.S Anathan
5. Dr. S Jadhri
6. Dr. R S Rana
7. Dr. Ashok Jaiswal

-
1. Joint / Training programs
 2. Collaborative ventures including student exchange / faculty exchange program
 3. Setting up campuses abroad
 4. Utilizing alumni for making commercial presence
 5. Improving quality through faculty and infrastructure development.
 6. Fellow ship and distance education.

Our group feels that to make our presence at abroad, we need to have clients in other countries. For this we should project our strengths on web site (good web site with faculty details), also science needs to be popularized in international journals.

STRATEGIC ISSUE NO. 6

NAMES OF GROUP MEMBERS:

1. Dr Venkateswarlu
 2. Dr Arpitha khanna
 3. Dr..A.Vennilla
 - 4.Dr.P.K.Pandey
 - 5.Mrs.Asha landge
 - 6.Dr.Geetanjali deshmuKh
 - 7.Dr.Aparna choudary
-

Cluster I

1. Infrastructure:
 - a. Laboratory standards – certification,
 - b. Field facilities
 - c. Other infrastructure like library etc.
- 2 Faculties:
 - a faculty recruitment norms and fifty percent quota for locals
 - b minimum quality requirement
 - c faculty improvements (HRD)
 - d evaluation
- 3 Curriculum:
 - a globally recognized courses.
- 4 market survey and networking

Cluster II

Regulation :

- Accreditation
- Fee structure / scholarships
- MOU / registration: ICAR / Ministry of Agrl / HRD / UGC / EA
- Admission policies: joint admission tests / GRE / TOEFL
- Public / private
- Audit
- No regulations

Date of Brainstorming: 01.12.2005
AU: KVAFSU, Bidar

STRATEGIC ISSUE NO. 4

NAMES OF GROUP MEMBERS:

Dr. Suresh S. Honnappagol,
Dr. Y. Hari babu,
Dr. M.K.Tandle,
Dr. R.G.Bijurkar,
Dr. P.G.Waghmare

This strategic issue has received a total of 161 responses graded as below.

1. Strong advertisement through updated websites, establishment of consulates, cultural attaches at the embassy offices – 67 responses
2. Facilities in terms of laboratories,& hostels of international standards need to be developed for attracting foreign students –21 responses
3. Quality of education of international standards – 19 responses
4. Financial assistance in the form of fellowships & research grants –15 responses
5. MOU between the universities in the field of teaching & research-10 responses
6. Sandwich model of education of policy involving exchange of faculty & students oriented towards human resources developments – 9 responses
7. Establishment of international placement cell – 6 responses
8. Education should be made cost-effective so as to be affordable to the common people – 5 responses
9. Concept of agro eco tourism & agro vet business introduction – 3 responses
10. Others like contemporary education policy & organizing international seminars – 2 responses.

Based on the above responses the group recommends the following strategic issues towards attracting foreign students, in veterinary universities of the country.

1. Educational information service at every embassy offices & development of strong website.
2. Creation of infrastructure facilities of international standards at university campuses.
3. Provision for liberal financial assistance in the form of research grants.
4. Entering MOU between the universities
5. Establishing wide range of biodiversity, agro eco tourism & agro vet business.

STRATEGIC ISSUE NO. 5

NAMES OF GROUP MEMBERS:

Dr.K.S.Prathap kumar

Dr.D.Dilip kumar

M.D.Suranagi

U.S.Jadhav

Dr.N.V.Jadhav

The proposals forwarded by the participants were divided in to different clusters like

1. Bio informatics – 37
2. Colloborative efforts – 37
3. Faculty exchange – 15
4. Commercial/Marketing presence – 10
5. Standard research – 9
6. Govt / Embassy assistance – 8
7. Advertisement / Information – 8
8. Misc. which could not be clubbed with any of the above clusters - 21

STRATEGIC ISSUE NO. 6

NAMES OF GROUP MEMBERS:

Dr D.G.K.Rao
Dr.Kalleshnasappa.G.M.
Dr.Gadre K.M.
Dr Shubhangi Tagane

As far as higher veterinary sciences education in India is considered, India as of now is well prepared to face the entry of foreign universities both as competitors & as co-operators to further hasten the betterment of quality veterinary education on international scenario. Added to this preparedness India still requires the autonomy & independency in the administrative set up of veterinary institutions. So far as regulatory requirements are concerned for the entry of foreign universities, the following factors are to be taken into account before venturing into any MoU with any foreign university for its entry into Indian territory.

The factors are

1. The foreign university should itself first register with the appropriate authority in India & be abide by the laws imposed by such authority there of for governing the smooth running of such universities in India.
2. The foreign university must adhere to the norm of uniform staff, salary, & syllabi pattern along with fixed student intake per annum as directed by the Indian administration.
3. Local & indigenous socio-economic & culture-ethnic heritages are to be protected while allowing any such foreign set up.
4. Research & Development is to be oriented keeping in view the local needs of the populae & thus the target is to be laid on carrying out research work with the locally available species of animals for the better utilization & recognition on global basis.

Date of Brainstorming: 15.12. 2005

STRATEGIC ISSUE NO. 4

NAMES OF GROUP MEMBERS:

1. Dr B.Behera Professor, Plant Pathology
 2. Dr M.R. Kar Professor, Plant Physiology
 3. Dr B.S. Rath Asst. Professor, Agronomy
 4. Dr P. Swain Asst. Professor, Vety. Extension
 5. Dr N.K. Sahoo Assoc. Professor Nematology
-

Effective strategies for attracting foreign students in Agricultural Universities of India :-

1. Improvement of Infra-structural facilities of the institute like lab facilities, library, accommodation communication and campus development etc.
33 responses
2. Through wide publicity and advertisement: publicity of the institute through website, mass media, e-library, research journals and organizing counseling centers.
24 responses
3. Availability of technical resources personnel's.
17 responses
4. Extending of incentives like scholarship, reservation of seats and financial assistances.
16 responses
5. Designing suitable practical oriented courses curriculum (with exotic matching)
12 responses
6. Liasoning and rapport building with other countries through Embassy, NRIS, Liasoning agents.
6 responses

STRATEGIC ISSUE NO. 5

NAMES OF GROUP MEMBERS:

1. Dr Rama Chandra Dash
 2. Sri Sarat Chandra Pradha
 3. Dr Niranjana Sahoo
 4. Dr (Mrs) Rajashree Mishra
-

1. Publicity of the University

What?

- ★ Achievement of the University
- ★ On-going activities
- ★ Future Plans
- ★ Faculties-Education, Experience, Specialization, Achievements.

How?

- ★ Through University Portals/Website.
- ★ Through newspaper, Agril. Research Journals, Technical bulletins, electronic media.
- ★ Establishment of counselling centers at Embassy/Universities
- ★ Through the Alumni residing abroad

2. Identification of potential country for establishment of University.

How?

- ★ Through visiting team of experts from the University
- ★ By feedback from the target group fro the establishment of University
- ★ Identification of common problems of two countries
- ★ Collaborative/Twining/Joint programme

3. Funding

- ★ Through GOI/State Govt/University
- ★ Through NRI and Alumni
- ★ Through tuition fees and internal resources
- ★ Through Public issues.

STRATEGIC ISSUE NO. 6

NAMES OF GROUP MEMBERS:

1. Dr D.N. Panda,
 2. Dr J.C. Muduli,
 3. Dr R.C. Mishra,
 4. Dr H.N. Atibudhi,
 5. Dr S.R. Das
-

1. Establishment of a regulatory body like ICAR to formulate norms for opening of branches of foreign Universities in India. These norms may include the following:

- ★ The status and stature/reputation of the University
- ★ The reasons of their interest to open branches in India
- ★ What will be the Indian interest in allowing them
- ★ This should not clash with the interest of the Indian Universities.
- ★ Priority should be given to open branches, which offer courses not available / not much advanced in India.
- ★ The course curriculum should be compatible with the curriculum of Indian Universities and of our use.
- ★ The course curriculum of all foreign universities opening branches in India should be similar
- ★ Fee structure should be fixed reasonably looking into the Indian economic standard.
- ★ Admission should be on the basis of merit but not on the basis of cast / Religion.
- ★ The Foreign Universities interested to open branches to give undertaking not to encourage or propagate religion or terrorism
 - ★ Liberalisation of VISA facilities to encourage entry of foreign resource personals and students.
 - ★ Proper medical check-up and quarantine measures for personals entering India
 - ★ Provision of land and other services for opening of branches.
 - ★ Liberalization of policies to encourage foreign Universities.

Date of Brainstorming: 25 .01. 2006
AU: College of Horticulture, KAU, Vellanikkara

Strategic Issue No: 4

Name of Group Members:

Dr C.T. Abraham
Dr Jessy Thomas
Dr Jayan P.R.
Dr M. Mohanan
Mr M.V.Sudheesh.

Publicity and Awareness:

- Create a website – periodically updated.
- a. Proper advertisement through channels, media educational fair etc. Utilize the services of NRIs also.
- b. Highlight the cultural heritage, diversity of climate, soil, a crops, agril. Practices, animal etc so as to high light the opportunities for students from different countries.

Infrastructural facilities:

- a. Academic –labs, class rooms, conference halls,
- b. Residential facilities – for teachers & students.
 - Fully residential facilities

Financial Issues

- a. cost of education – cheaper than other countries.
- b. Scholarships / fellowships to be given to meritious students

Formalities for admission, Visa etc to be simplified, transparent and to be operated through sample window system.

Curriculum:

- a. The course and syllabus to be modified to an international standard.
 - b. Important to be given for latest information and current issues.
 - c. Student exchange (twinning) programmes to be introduced in collaboration with other Universities.
 - d. Offer short term courses related to specialized fields of student in Human Resource Development
- a. Faculty should be encouraged for FIP to update knowledge and competence
- Others
- 1. Conduct survey of students abroad to identify the aspects to be given importance in our programme
 - 2. Should get accreditation / ISO certification etc.
 - 3. There should be a University level nodal officer to take care of foreign students.

Strategic Issue No: 5

Names of Group Members:

Dr P.V. Balachandran
Dr Maicykutty P. Mathew
Dr Rena Menon
Dr P.J. Rajkamal
Dr M.D. Nair
Dr P. Raji

Strengthening the website of the university, hosting all the relevant details regarding the strength and opportunities, faculty procedure for admission including online admission.

Making use of NRI's and Alumni associations abroad for publicizing the strength and opportunities & for establishing contacts.

Political will for providing full autonomy for the universities for establishing the contacts with the foreign universities.

Rules and regulations – streamlining and simplifying the procedure for establishment of universities abroad.

Identifying a nodal agency specifically for this purpose and appointing liason officers at strategic locations abroad.

Providing sufficient budgetary provision

Conduct of International workshops in India & abroad & establishing collaborative academic programme

Starting distant education programme in strategic subjects

Starting of faculty and student exchange programme with foreign universities with MoU.

Inanities for faculty, alumni & NRI for establishing contacts with foreign universities.

Strategic Issue No: 6

Names of Group Members:

Dr M.Achuthan Nair
Dr M. Mohandas
Dr Meera V. Menon
Dr Jayasree Krishnakutty
Dr D. Girija

Regulatory system and procedures

Appropriate regulatory structure enacted by the Parliament

Purview mechanism to monitor the working of the foreign universities and a systematic procedure for punishing erring institutions.

Accreditation & mutual recognition.

- Should evolve a system of accreditation of foreign universities based on transparent rules & procedures considering standards, relevance, use of local resources and evaluation standards.
- Permission should be granted on reciprocal basis
- Accreditation on reciprocal basis
- A single body for regulating entry of foreign universities based as well defined criteria.
- A system of centimes monitoring of the working of the foreign university

Simplification of procedures for linkages / collaboration with foreign university based on transparent & objective criteria.

Contact on fee structure & introduction of revenue sharing model.

- Streamlining admission procedures based on simple rules & MoU
- Resolving level central clause for human resources and staff recruitment
- Make a list of areas where foreign degrees/programs are not permitted /

Identify areas of mutual interest for collaborations & suitable for local conditions

Fixation of standard for each excuse based on accreditation process and MoU.

List and priority areas on which foreign Utee's can get attracted. This has to be linked with the needs of the country.

Initially allow only reputed & established Universities on experimental basis and extend it to less known universities much eater if needed.

Strong measures to improve the academic standards of SAUs so that the chances for foreign universities to open programmes in India can be mentioned.

- Faculty development
- Networking of SAUs, NARS to enhance their collective competence.

Annex 10.2: Driving forces and driving elements for strategic analysis

The brainstorming cards received from the respondents were clustered into several groups designated as themes or driving forces. The ideas clustered into one theme were further segregated to clustered into several sub-theme or driving elements. For the section discussed in chapter 10, the following themes and sub-themes identified are listed below, the detailed analysis is available in chapter 10.

Themes (driving forces)

- a. Marketing strategy
- b. HRD strategy
- c. Financial strategy
- d. Strategic linkages & collaborations
- e. Strategic policy development
- f. Strategic infrastructure development
- g. Strategy for education quality & standards
- h. Student support services
- i. Administrative & regulatory mechanisms
- j. Setting up branch campuses abroad
- k. Strategic competitiveness
- l. Joint educational delivery systems with foreign universities

Sub themes for above mentioned themes

<p>a. Marketing strategy</p> <ol style="list-style-type: none"> 1. Informative website 2. Publicity through newspaper /media 3. Publicity through internet 4. Publicity through advertisements abroad 5. Publicity through exhibition/seminars abroad 6. Publicity through official representatives 7. Publicity through opening of publicity centers/ off campus information centers/counseling cells 8. Conducting educational fairs abroad 9. Projecting strengths of university (location, specialization etc) 10. Projecting innovative ideas 11. Earmarking seats for foreign students 12. Sending circulars to foreign universities 13. Tie up with foreign universities 14. Market survey and networking 15. Hiring consultants abroad 16. Comprehensive information dissemination through ICAR 17. Taking up consultancies abroad <p>e. Strategic policy development</p> <ol style="list-style-type: none"> 1. Creating cordial and friendly environment 2. Increasing credibility of university 3. Identification of needy or target countries 4. Setting up of campuses of university in other states of India 5. Taking up outsourcing assignments 6. Simplified but effective quarantine procedures (animal sciences) 7. Easy visa norms 8. Simpler currency exchange mechanism 9. Amendment of government rules for facilitating smooth entry of foreign students 10. Proper advisory system 	<p>b. HRD strategy</p> <ol style="list-style-type: none"> 1. Faculty development for quality and international standard 2. Regular up-gradation of skills through training/ refresher courses 3. Deputation of faculty abroad 4. Personality development 5. Developing salesman attitude 6. Comprehensive evaluation of faculty 7. Improving faculty strength 8. Incentives for capable faculty 9. Appointment of competent faculty on merit criteria 10. Faculty pooling within country 11. Providing technical expertise/ consultancies to commercial ventures abroad 12. Inviting foreigners for workshops 13. Foreign universities create enough job opportunities for Indian students 14. No reservation for technical manpower <p>j. Setting up branch campuses abroad</p> <ol style="list-style-type: none"> 1. Model campuses abroad 2. Establishment of franchise abroad <p>i. Administrative & regulatory mechanisms</p> <ol style="list-style-type: none"> 1. Performance based ranking of foreign universities 2. Amendment of regulatory Acts 3. Liberalization of procedures 4. Apex body for registration/ regulation/ licensing / monitoring 5. Guidelines from ICAR 6. Regulation through concerned ministry <p>7. Registration/ accreditation/ regulation/ at national level</p> <ol style="list-style-type: none"> 8. Regulation at international level 9. Recognition and accreditation of university in their own country 10. Faculty recruitment by foreign universities 50% positions for locals 11. Security of foreign nationals 12. Special privileges for developing nations 13. Education by foreign universities at par with local university 14. Minimal political influence 15. Nature of university private or public 16. Regular audit 	<p>c. Financial strategy</p> <ol style="list-style-type: none"> 1. Advantage of low cost education 2. Provide scholarships/ fellowships to foreign students 3. Assistantship to foreign students 4. Incentives to foreign students 5. Provide loans for studies in India 6. Separate fee structure for foreign students <p>f. Strategic infrastructure development</p> <ol style="list-style-type: none"> 1. Good general infrastructure 2. World class boarding/lodging 3. World class games/sports/health care amenities 4. Well equipped laboratories 5. Teaching facilities (<i>class rooms, teaching aids etc</i>) 6. Research facilities 7. Field facilities 8. Library facilities 9. Getting ISO-9001 certification 10. Recognition of labs by certification agencies <p>g. Strategy for education quality & standards</p> <ol style="list-style-type: none"> 1. International recognition of degree 2. Harmonized national standards 3. Harmonized international standards 4. Development of center of excellence 5. International standards: Education methodologies 6. International accreditation 7. National accreditation: ICAR 8. National accreditation: other than ICAR agencies 9. Demand oriented curriculum 10. Harmonized national curriculum 11. Timely up-gradation and revision of curriculum 12. Demand oriented courses 13. Designing special courses 14. Designing globally recognized courses 15. Quality teaching 16. Ranking of Indian universities and colleges 17. Providing intensive practical training 18. Enhancing student-teacher interaction 19. Use of international language for communication 	<p>d. Strategic linkages & collaborations</p> <ol style="list-style-type: none"> 1. MoU for research projects 2. Devising joint educational programs within country 3. Devising joint educational programs outside country 4. Increasing publications in international journals 5. Through international journals 6. Mutual exchange of faculty 7. Mutual exchange of students 8. Conducting international workshops 9. Eliciting role of embassies/ consulates for linkages 10. Eliciting role of Alumni 11. Eliciting role of NRIs 12. Establishing counseling centers abroad 13. Establishing study centers abroad 14. Establishing branch campuses abroad 15. Establishing foreign relation cell in universities 16. Strengthening ICAR-SAU linkages 17. Taking up assignments of development of faculty other countries <p>h. Student support services</p> <ol style="list-style-type: none"> 1. Simplified admission procedure 2. International placement cell 3. Work permit for limited hours 4. Smooth flow of information 5. Joint admission test like GRE/ TOEFL 6. Common entrance examination <p>k. Strategic competitiveness</p> <ol style="list-style-type: none"> 1. Providing low cost education 2. Competitive courses based on biodiversity or geo-climatic advantages <p>l. Joint educational delivery systems with foreign universities</p> <ol style="list-style-type: none"> 1. Joint degree programs 2. Twinning programs 3. Distance education 4. Contact programs
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Annex 10.3: Exhaustive list of subject in order of the importance in each ICAR division

S. N.	Major divisions with discipline	Score
1	Crop Science	
1.	Biotechnology (Agricultural Science)	57
2.	Plant Breeding	23
3.	Plant Pathology	22
4.	Agricultural Entomology	11
5.	Microbiology (Agriculture)	11
6.	Seed Technology	8
7.	Genetics and Cytogenetics	7
8.	Plant Protection	3
9.	Agricultural Meteorology	2
10.	Biochemistry (Plant Science)	1
11.	Economic Botany	1
12.	Nematology	1
2	Agricultural Engineering & Technology	
1.	Agricultural Structures & Process Engineering	10
2.	Farm Power & Machinery	10
3.	Bio energy including renewable Energy sources	4
4.	Soil & Water Conservation Engineering	3
5.	Food Engineering	1
6.	Social Sciences	
7.	Agriculture Extension	10
8.	Vet. Extension Education	9
9.	Dairy Extension	9
10.	Integrated rural development	2
3	Agriculture Education (HRD)	
1.	Food & Nutrition	6
2.	Fashion technology	2
3.	Textile & Clothing	1
4.	Home science	1
4	Horticulture	
1	Aromatic and Medicinal Plants	11
2	Spices and Plantation crops & Management	10
3	Horticulture	9
4	Horticulture (Fruit Science)	9
5	Horticulture (Vegetable Science)	7
6	Post Harvest Technology	4
7	Horticulture (Floriculture)	2
5	Animal Science	
1	Biotechnology (Animal Science)	52
2	Veterinary Medicine	41
3	Veterinary Microbiology, Vet. Bacteriology, Vet. Virology, Immunology	40
4	Animal Genetics and Breeding	37
5	Animal Nutrition	36

S. N.	Major divisions with discipline	Score
6	Livestock Production and Management	27
7	Dairy Microbiology & Dairy Biotechnology	26
8	Poultry Science	24
9	Dairy technology	24
10	Veterinary Public Health/ Epidemiology	21
11	Animal Reproduction/ Gynecology	15
12	Livestock Products Technology	14
13	Veterinary Pharmacology& Vet. Toxicology	14
14	Veterinary Surgery	14
15	Veterinary Pathology	11
16	Biochemistry (Animal Science)	9
17	Animal Physiology	8
18	Dairy Processing Technology	8
19	Veterinary Parasitology	6
20	Dairy Engineering	6
21	Dairy Chemistry	5
22	Dairy business management	5
23	Dairy Quality control	5
24	Veterinary Anatomy	4
25	Dairy economics	4
26	Veterinary lab diagnostics	3
27	Dairy chemistry	2
28	Studies on Elephant	1
6	Natural Resources Management	
1	Agronomy	11
2	Soil & Water Management	10
3	Organic Farming	10
4	Tea Husbandry	9
5	Sustainable Agriculture/ Natural Resource management	5
6	Soil Science	4
7	Soil Science- Pedology	4
8	Soil Sciences-Soil Chem./Fert. /Microbiology	4
9	Homestead Farming	3
10	Soil Sciences- Soil Phy. /Soil & Water Conservation	3
11	Forestry	3
12	Agro forestry	3
7	Fisheries	
1	Aquaculture	25
2	Fish Genetics and Biotechnology	22
3	Fish Nutrition and Biochemistry	16
4	Fish Microbiology/Fish Pathology	14
5	Fisheries Resource Management	13
6	Fisheries Sciences/ Fish Hydro/Fish Env/Fish IT/FL	8
7	Fisheries Business Management	7

S. N.	Major divisions with discipline	Score
8	Fisheries Extension Education	6
9	Fish Processing Technology	4
10	Fish Post harvest technology	3
11	Mari culture	2
12	Inland Aquaculture	2
13	Fisheries Economics	2
14	Fresh water Aquaculture	1
15	Fisheries Biology	1
16	Fish Breeding Hatchery Management	1
17	Fish Husbandry	1
8	Others and new subjects	
1	Bio informatics	18
2	Agricultural Economics	13
3	Agri-Business	13
4	Food Science and Technology	13
5	Agricultural Biodiversity	10
6	Environmental Science	5
7	Agricultural Marketing	3
8	Management studies	3
9	Agricultural Statistics	2
10	Livestock/ Veterinary Economics	1
11	Bio statistics	1
12	Remote Sensing	1
13	Physics/ Agricultural Physics	1
14	Agriculture Processing	1
15	IPR issues in Agriculture	1

Annex 11.1: Brainstorming session on GATS and Strategic Issues in Higher Agricultural Education; SWOT Analysis

Date of Brainstorming: 15.6.2005
AU: ANGRAU, Hyderabad

STRATEGIC ISSUE NO.07

NAMES OF GROUP MEMBERS:

Dr M Ganesh
Dr T Raman Goud
Dr Y. Ramana Reddy
Dr B Ramesh Gupta

HRD

- Availability of highly trained human resources
- Good strength in human resource
- Good teaching and practical experience

EDUCATION SYSTEM

- Strong ICAR-SAU-Education-Research and Extension System in India
- More no. of Agricultural Universities in India
- Fluency in English language
- Agricultural curriculum developed with International standards.
- Low cost of education and service delivery

FACILITIES

- Availability of sufficient infrastructure
- Database generated on Agriculture Research Achievement

BIO-DIVERSITY

- Plant and Animal genetic diversity and sustainable agriculture

AREAS FOR THE CENTRE FOR EXCELLENCE

- Dry land farming
- Plant Breeding
- Hybrid Seed Production & Seed Research
- Sustainable agriculture
- Integrated Pest management
- Dairy & Sheep and goat; Poultry production
- Organic farming
- Aromatic and Medicinal

CULTURE

- Guru Shishya Education System
- Homely treatment (yoga, meditation)

STRATEGIC ISSUE NO.08

NAMES OF GROUP MEMBERS:

Prof K Janardhan Reddy
Prof. G.V. Krishna Rao
Prof. Sudhakar Reddy
Dr K.V. Rao

Weaknesses in Agricultural Education

1. Low practical orientation
Solution: More emphasis should be given to practical aspects of agriculture
2. Poor linkages with the industry
Solution: Better interaction should be developed between academic and industry
3. Poor infrastructure facilities
Solution: Infrastructure facilities at research institutes and universities have to be strengthened on par with the developed countries
4. Lack of interaction with other countries
Solution: Trained faculty and establishment of academic collaboration with the developed countries will definitely improve the Indian Agricultural education system.
5. Up gradation of syllabus periodically
Solution: Syllabus up gradation is essential from time to time keeping the needs of the society.
6. For strengthening of counseling & placement cells
Solution: Strengthening of counseling and placement cells & lack of funding
7. Motivation and encouragement of hard working faculty by monetary means on par with developed countries.

STRATEGIC ISSUE NO.09

NAMES OF GROUP MEMBERS:

Dr G.V. Subbaratnam
Dr B Kalakumar
Dr A Anand Kumar
Dr D Thammi Raju

- Availability of infrastructural facilities in selected areas
- Cost of Education and living conditions comparatively cheaper
- Availability of Quality teaching
- Competence to compete at international level in selected areas
- Positive govt. attitude and support
- Opportunity to have collaborative and exchange programmes
- Diversified agro-ecosystems to suit different foreign countries
- Development and exchange of social, cultural relations
- Economic advantage
- Employment opportunities chance
- Mobility of competitive faculty
- Allocation of seats for foreign students
- Locational advantage of our country geographically
- Vast network of agril. Universities in the country
- Online education (e-learning)
- Prevalence of suitable environment

STRATEGIC ISSUE NO.10

NAMES OF GROUP MEMBERS:

Dr G.V. Narasa Reddy
Dr G.V. Krishna Reddy
Dr A.S. Raju
Dr K Hussain Saheb
Dr P. Rajeshwar Reddy

- Foreign students come to India
 - a) Quality of education may be affected – Less IQ and language problem
 - b) Teacher's determination towards foreign students
 - c) Piracy of research and/or knowledge
 - d) Threat to Indian agriculture/farmer in terms of support from the country
 - e) May be forced to take up PG Research in areas irrelevant to Indian conditions
 - f) Security problems may arise

- Set up branch campus abroad
 - a) Financial constraint
 - b) Sufficient number of efficient faculty will be reduced.
 - c) Facing competition from other developed/developing countries

- Indian professors moving abroad
 - Brain drain
 - Threat to valuable genetic resources
 - Efficient teachers may not get equal opportunities

Date of Brainstorming: 15.7.2005
AU: UPPDVU, Mathura

STRATEGIC ISSUE NO. 7

NAMES OF GROUP MEMBERS:

1. Dr M.P. Agarwal
 2. Dr C.M. Kulshreshta
 3. Dr H.P. Lal
 4. Maj. Sameer Bhatnagar
 5. Dr M.P. Gupta
-

Of the ideas generated the following are in the order of the majority (major Issues)

- Indian Universities set up branch campuses abroad-11
- Indian Professors visit abroad for service delivery-10
- India has a rich depository of livestock like cattle, Buffaloes, sheep, camel, goat, elephants and wild/ zoo animals. So there is a wide scope for studies on them in India-9
- Foreign students should come to India-7
- Emphasis on employment-1
- Excellent academic staff-3
- Lack of funds-5
- Lack of practical training to provide knowledge through advertisements, Newspaper journals to professionals and farmers and livestock producers-3
- Miscellaneous-4

STRATEGIC ISSUE NO. 8

NAMES OF GROUP MEMBERS:

1. Dr C.M. Kulshreshta
 2. Dr M.P. Agarwal
 3. Dr S.P. Lal
 4. Maj. Sameer Bhatnagar
-

Major Issues:

- Lack of Infrastructure-15
- Shortage of Manpower-11
- Lack of Funds-09
- Lack of Practical Training-05
- Corrupt Practices-05
- Less Animal Structure-01
- Lack of quality germplasm-01
- Courses design as on need basis-01
- Poor games facility-01

STRATEGIC ISSUE NO. 9

NAMES OF GROUP MEMBERS:

1. Dr A.K. Bhatia
 2. Dr S.M. Shukla
 3. Dr Dayashankar Sachin
-

There are number of veterinary colleges or institutions which have a very strong education set up in the country and have talented scientists or teachers. Therefore, their services can be utilized for service delivery abroad. This kind of service delivery will help the nation in terms of economy, exchange of views, in developing standard infrastructure in our veterinary universities to compete the global scenario. It will also help in modifying the syllabi of veterinary education from time to time, which would be enough to meet the challenges successfully.

STRATEGIC ISSUE NO. 10

NAMES OF GROUP MEMBERS:

1. Dr H. S. Panwar
 2. Dr S.K. Garg
 3. Dr Atul Saxena
-

- Presently we do not have any competition in our education system and thus we lack competitive spirit.
- If foreign universities are allowed in operated in India, they will pose threat to operate in India; the threat will be in the form of:
- Attract students with better financial backgrounds
- Attract best quality professionals as teachers and researchers
- Will have free access to century old genetic resources and potential, which are yet to be patented by us.

Remedies

- Improve our infrastructure facilities to improve quality education and compete globally
- Prepare the database for the genetic resources and get them patented without any loss of time
- Education should be made free from any political interference
- Reservation in the selection of the professionals should be stopped to improve the basic education system.
- Provide better carrier properties and incentives to the outstanding professionals.

Date of Brainstorming: 18.7.2005
AU: CSK-HPKV, Palampur

STRATEGIC ISSUE NO. 7

NAMES OF GROUP MEMBERS:

1. Dr G.L. Bansal
2. Dr C.R. Sharma
3. Dr S.R. Thakur
4. Dr Desh Raj
5. Dr. Ashok Sharma

-
- Competent faculty
 - Pleasant and varying climatic conditions
 - Abundance of biodiversity
 - Excellent infrastructure facility
 - Good democratic relationship within the country and also the outside world
 - Course curriculum effective
 - Improved and variety courses, short term courses
 - Miscellaneous parameters
 - a) Standard regulations
 - b) Exchange of teachers and students
 - c) Diversified culture
 - d) Hard working and honest people
 - e) Variety of food for diverse people
 - f) Cheap labor compared to other countries
 - g) Large human resource
 - h) Healthy environment

STRATEGIC ISSUE NO. 8

NAMES OF GROUP MEMBERS:

1. Dr Rekha Malhotra
 2. Dr J.S. Sohi
 3. Dr Vidya Sagar
 4. Dr L.S. Sudhakar
 5. Dr Suruchi Katoch
 6. Dr. Anjan Kalia
-

- Inadequate budget allocation to agricultural education/SAU
- Inadequate projection/publicity of SAUs at international level
- Supremacy of bureaucrats in policy decisions
- Inadequate infrastructure and poor maintenance thereof
- Only mediocre preferring higher education in agriculture
- Increasing interference by politicians in SAUs
- Mostly academic research, which lacks practical
- Brain suppression in SAUs

STRATEGIC ISSUE NO. 9

NAMES OF GROUP MEMBERS:

1. Dr G.L. Bansal
 2. Dr C.R. Sharma
 3. Dr S.R. Thakur
 4. Dr Desh Raj
 5. Dr. Ashok Sharma
-

- Excellent and trained human resource for imparting training and education
- Exploring the talent of this university and spread all over the world
- Diversity with respect to experimentation with different crops of the world as well as hot spot for many pests and diseases for global farm research
- Congenial and healthy environment and reasonable cost of living to afford education
- Exploring medicinal plants of Himalayas in collaboration with foreign industries for commercialization

STRATEGIC ISSUE NO. 10

NAMES OF GROUP MEMBERS:

1. Dr Rekha Malhotra
 2. Dr J.S. Sohi
 3. Dr Vidya Sagar
 4. Dr Anjan Kalia
 5. Dr. Suruchi Katoch
-

- Brain Drain
- Cultural deterioration
- Theft of bio resources
- Hijacking of innovative ideas
- Establishment of independent campuses by foreign universities
- Bureaucratic set-up
- Piracy of sensitive information

Date of Brainstorming: 12.08.2005
AU: NDRI,Karnal

STRATEGIC ISSUE NO.7

NAMES OF GROUP MEMBERS

-
- 1.Possesses top class expertise in HRD related to dairy science and education & research.
 - 2.Possesses good infrastructure for research, training, education, student accommodation and work environment in dairying.
 - 3.Unique opportunity for students to get education and training in tropical dairying.
 - 4.Availability of manufacture of wide variety of Indian traditional dairy products backed by old expertise &knowledge
 - 5.The fee structure for education is highly reasonable and competitive.
 - 6.Medium of instruction is English, which is a universal language in the world.
 - 7.Large biodiversity in terms of animal, microbial and fodder resources is available for broader educational perspective.

STRATEGIC ISSUE NO.8

NAMES OF GROUP MEMBERS

Weaknesses:

- 1.Lack of practical oriented course curriculum.
- 2.Lack of same basic amenities – power shortage, poor hygienic & sanitary standards.
- 3.Poor talent due to political interference on selections based on reservations rather than merit.
- 4.Non-recognition of talent.
- 5.Poor website
- 6.Administrative and bureaucratic hurdles
- 7.Poor inter institutional and inter university mobility.

STRATEGIC ISSUE NO.9

NAMES OF GROUP MEMBERS

- 1.Dr.T.K.Walli
 2. Dr.Dharpal
 - 3.Dr.S.K.Kananjia
 - 4.Dr. T.K.Datta
 - 5.Sri B.B.Raina
 - 6.Dr.P.K.Nagpal
 - 7.Dr.R.S.Manik
 - 8.Dr.Ramkumar
-

Opportunities for Indian agricultural educational system:

Theme: Regarding inviting foreign students: Following sub themes have emerged

- 1.Geographical advantage: a.) Diverse agro climatic conditions.
b) Tropical experience
c) Can provide leadership to SAARC countries.
- 2.Biodiversity
a) Many species / breed of dairy animal
b) Large bovine population
c) Best milch buffalo available (50% of the worlds buffalo population.)
- 3.Production systems:
a) Different farming systems models available
b) Expertise in smallholder farming system
c) Expertise in dairy cooperatives.
- 4.Skilled man power / expertise
a) Expertise in dairy processing, production &management
b) IT leadership
c) English
- 5.Cost effective training dairy educational programme
- 6.Leadership in the manufacturing of traditional dairy products.
- 7.Strong alumni base globally
- 8.Existing foreign collaboration

STRATEGIC ISSUE NO.10

NAMES OF GROUP MEMBERS

- 1.Dr.T.K.Walli
 2. Dr.Dharpal
 - 3.Dr.S.K.Kananjia
 - 4.Dr. T.K.Datta
 - 5.Sri B.B.Raina
 - 6.Dr.P.K.Nagpal
 - 7.Dr.R.S.Manik
 - 8.Dr.Ramkumar
-

Threats for Indian agricultural education system

- 1.Brain Drain
- 2.Loss of germ plasma
- 3.Theft of intellectual property rights
- 4.National security

Date of Brainstorming: 26.08.2005
AU: CIFE, Mumbai

STRATEGIC ISSUE NO. 7

NAMES OF GROUP MEMBERS:

1. Dr S D Singh
 2. Dr.S. Basu
 3. Dr.K K Jain
 4. Dr. Neelam sahan
 5. Dr. Latha shenoy
 6. Dr. K.Venkateswarlu
 7. Dr. R P Raman
-

1. Education is relatively less expensive
2. Diversity in climate
3. Bio diversity
4. English as a medium for instructions and communication
5. Highly trained man power

STRATEGIC ISSUE NO. 8

NAMES OF GROUP MEMBERS:

Dr S D Singh
Dr.S. Basu
Dr.K K Jain
Dr. Neelam sahan
Dr. Latha shenoy
Dr. K.Venkateswarlu
Dr. R P Raman

1. Bureaucratic set interference (red tapism, delays, castism, religionalism, regionalism etc
2. Corruption and bias
3. Poor infrastructure
4. Poor communication
5. Brain drain
6. Less remuneration
7. Professional jealousy
8. Mediocrity
9. Less accountability
10. Lack of regulatory mechanism
11. Projection of India in poor light
12. Lack of professionalism
13. Lack of international exposure of faculty
14. Improper work culture
15. Web sites not at par with international
16. No science popularization at international level
17. Less recruitment of fisheries faculty.
18. Lack of fisheries council
19. Ranking of universities not there.

STRATEGIC ISSUE NO. 9

NAMES OF GROUP MEMBERS:

Dr S K Chakrabarty
Dr. S N Ojha
Dr. V K Tiwari
Dr. R K Langar
Dr. C S Chaturvedi
Dr Chandraprakash

1. We have rich resources from hot to cold water, from seawater to saline, brackish and fresh water. We have 2000 species out of 22000 sp of the world.
2. We have 16 major agro climatic conditions. We have technologies for fresh water, brackish water, seawater, cold water and fisheries.
3. There are seven institutions and 12 colleges in fisheries, which are scattered over different agro climatic zones of the country.
4. Everybody is expert in English, most widely spoken international language
5. The cost of teaching is less.

STRATEGIC ISSUE NO. 10

NAMES OF GROUP MEMBERS:

Dr S K Chakrabarty
Dr. S N Ojha
Dr. V K Tiwari
Dr. R K Langar
Dr. C S Chaturvedi
Dr Chandraprakash

1. Threats of brain drain may increase with more interaction as developed countries have better pay package and HR policies.
2. Competition between universities will increase
3. Our infrastructure is still developing

Date of Brainstorming: 01.12.2005
AU: KVAFSU, Bidar

STRATEGIC ISSUE NO.7

NAMES OF GROUP MEMBERS:

Dr.S.Mallikharjun
Dr.M.M.Appannavar
Dr.V.B.Shelfar
Dr.K.C.Viranna
Dr.N.Prakash
Dr.B.Ramachandra
Dr.C.B.Madhav prasad

1. Wide domestic animal bio diversity including wild life.
2. Large geographical area with varied agro climatic conditions.
3. Availability of cheap & skilled laborers.
4. Availability of qualified scientific personnel
5. Uniform curriculum throughout the nation with regional species emphasis.
6. Strong base of age old ethno veterinary practices
7. Demand for animal products.
8. Sound ARIS network and animal health information system.
9. Good experience of mixed farming system.
10. Least cost education.
11. Low input based livestock production.
12. Knowledge of tropical diseases.

STRATEGIC ISSUE NO.8

NAMES OF GROUP MEMBERS:

Dr.S.M.usturge
Dr.D.B.Puranik
Dr.Ashok pawar
Dr.P.M.Thimmareddy
Dr.V.Nagabhushana
Dr.S.D.Sonawane
Dr.P.T.Chopde
Dr.D.N.Paikrao

1. Lack of adequate infrastructure for the assigned work.
2. Insufficient technical staff due to government policies.
3. No encouragement for the staff by the officers.
4. Personal bias for gender, region, religion, and caste and no due weight age is given to the staff.
5. Lack of sufficient funding.
6. No uniform career upliftment policies, which leads to frustration among the staff.
7. Unnecessary politicization of issues related to staff.

STRATEGIC ISSUE NO.9

NAMES OF GROUP MEMBERS:

Dr.S.Prasannakumar
Dr.Md.Amanullah
Dr.S.G.Patil
Dr.S.B.Patil

Present study attracted 137 responses.

The top three ideas were

1. Linkages/colloboration-44 (34%)
2. Biodiversity-26 (19%)
3. Professionals-21 (15%)

The other ideas were

1. Traditional knowledge-Techno-Veterinary Medicine-10 (7%)
2. Others- 34 (25%)

The linkage involves collaboration with various technical associations, alumni associations, industrial linkages & others.

Biodiversity mainly deals with use of genetic resources.

Professionals mainly included visit of professors and scientists abroad.

Traditional knowledge involves ethno veterinary medicine.

In others wild life diseases, diseases of indigenous animals, favorable agro-climatic zones etc.

STRATEGIC ISSUE NO.10

NAMES OF GROUP MEMBERS:

Dr.R.B.Dhabale
Dr.B.V.Siva prakash
Dr.A.Murugappa
Dr.Satish Biradar

Following points were considered as Threats if education is exported or imported

1. There may be a threat to our social culture.
2. There may be a brain drain of better teachers and students.
3. Due to interference of politics, poor quality teachers may be selected for training the students abroad.
4. It may lead to the threat for native germplasm.
5. Less privileged/poor students of native may not get the benefit.
6. This may be a threat for our employment.
7. Indian universities may not sustain competition.
8. Some also feel that there is no threat to our universities/education/individual.
9. Threat of privatization/price rise.
10. If satellite campus is opened abroad, foreign students may not visit our country.

Date of Brainstorming: 15.12.2005
AU: OUAT, Bhubneswar

STRATEGIC ISSUE NO. 7

NAMES OF GROUP MEMBERS:

1. Dr T.G. Patra
 2. Dr K.C. Sahoo
 3. Dr Pritishri Parhi
-

Strength in Indian Agriculture Systems

- 1) Highly efficient, knowledgeable faculty
- 2) Rich Bio-diversity and different Agro-climatic variation
- 3) Availability of low-cost technology
- 4) Rich heritage
- 5) Expertise on creating educational network system
- 6) Low cost living and healthy environment
- 7) Well balanced course curriculum

STRATEGIC ISSUE NO. 8

NAMES OF GROUP MEMBERS:

1. Dr R.K. Raj
 2. Dr P.K. Dehuri
 3. Dr J.C. Paul
 4. Dr M.K. Ghosal
 5. Dr N. Mohapatro
 6. D.N. Mohanty
-

1. Inadequate Infrastructure Facilities

- Classroom, Laboratories
- Accommodation
- Power Supply & Services
- Teaching Aids

2. Policy Consideration

- Political Interference
- Lack of coordination
- Commitments
- Periodical Evaluation
- Teachers non-involvement in policy consideration
- Collaborative Activities
- Liberalization of Mobility

3. Human Resource Development

- Inadequate staff components
- Lack of exposure
- Migration (Check)
- Lack of opportunity for specialization multipurpose activities

4. Funds

- Inadequate funds for Research
- Inadequate mobility facility for undergoing training & other educational activities inside country & abroad.
- Inadequate fund for field practical.

5. Working Environment

- Incentives
- Appreciation for good work
- Good environment

6. Communications and Publicity

STRATEGIC ISSUE NO. 9

NAMES OF GROUP MEMBERS:

Dr K.K. Ront,
Dr R.C. Parida,
Dr N. Sahoo,
Dr P.K. Sarangi

After analyzing the views of the participants members, the group arrives at the following conclusions as the opportunities available for Indian Agricultural Educational System.

- Exchange of faculty members, knowledge and languages.
- Wide scope for researching on untapped areas.
- Attractive climate and favorable geographic locations.
- Scope for collaborative research work.
- Human Resource Development
- Opportunity to work in the largest network of ICAR agricultural educational system
- Generation of more employment opportunities.
- Developed Information Technology System.
- Better scope to explore and utilize the rich and wide range of bio-diversity.

STRATEGIC ISSUE NO. 10

NAMES OF GROUP MEMBERS:

Dr R.K. Raj
Dr P.K. Dehuri
Dr J.C. Paul
Dr M.K. Ghosal
Dr N. Mohapatro
Dr D.N. Mohantray

1. Social

Crime & Violence (Terrorism)
Transmission of Diseases
Complexity Development
Disturbance in Social system
Disturbance in family life
Social stigma

2. Technical

Pilferation of traditional wisdom.
Brain drain
Disturbance in course curriculum
Deterioration of Agriculture System
Interference in intellectual properties.

3. Environmental

Exploitation of our rich biodiversity & heritage.
Enetic resource, flora & fauna, traditional knowledge

4) Cultural

Strong cultural belief restricts.

Date of Brainstorming: 25.1.2006
AU: College of Horticulture, KAU, Vellanikkara

Strategic Issue No: 7

Names of Group Members:

Dr C.R. Elsy

Dr Gregory Zacharia

Dr Narayanakutty, M.C.

Dr Sujatha, V.S.

Dr Jyothy M.L.

Dr Indira Devi P

Excellent and competent faculty

Diversity in agro ecological situational, animal diversity, crop diversity, climate and cultural

Good command on English

International standard on research & teaching

Facilities for hands on training

Low cost & efficient

International exposure

Good infrastructure

Large No. of institutions

Comprehensive syllabus & excellent teaching

Pleasant climate & peacefully campuses

Preparedness to move abroad

Rich traditional knowledge

Good reputation of educational institutions

Strategic Issue No: 8

Names of Group Members:

Dr Jose Mathew

Dr K.N. Aravinda Ghosh

Dr John Masti KD

Dr S.L. Goavavy

Dr M.r. Saseendranath

Dr V.K. G. Unnithan

Lack of modern infrastructure facility in most SAUs

Inadequacy of HRD

Financial constraints faced by SAUs

Lack of Coordination between administrative and academic personnel

Lack of curriculum standards and coverage to meet international requirement

Strategic Issue No: 9

Names of Group Members:

Dr C.R. Elsy
Dr Gregory Zachakia
Dr Sujatha VS
DrJyothi ML
Dr Indira Devi P.

Rich biodiversity, varied farming systems
Rich indigenous & traditional knowledge
Organic cultivation in practice
Specialized & expert faculty
Large no. of institutions with diverse specialized areas
Less expensive education
Unique crops & cropping systems like homestead farming
Hard working faculty with good communication skills
Facilities for eco tourism & farm tourisms
Will developed co-operative systems
Developed IT sector
Finance support from NRIs
Linkages through visiting faculty
Corporate bodies participation in agribusiness
Better climatic situations 0 high stand and of living
Strong desire to flourish
Hospitality of local people
Similar climatic situations with other countries

Strategic Issue No: 10

Name of Group Members:

Dr Jose Mathew

Dr K.N. Aravinda Ghosh

Dr P.I. Geevarghese

Dr M.r. Saseendranath

Dr V.K. G. Unnithan

Dr N.K. Vijayakumar

-
1. Brain drain
 2. Unhealthy competition
 3. Education may become unaffordable for this common man.
 4. Too much of political interference affecting quality of education
 5. Threat to Indian culture

Annex 11.2: Driving forces and driving elements for SWOT analysis

The brainstorming cards received from the respondents were clustered into several groups designated as themes or driving forces. The ideas clustered into one theme were further segregated to clustered into several sub-theme or driving elements. For the section discussed in chapter 11, the following themes and sub-themes identified are listed below, the detailed analysis is available in chapter 11.

Themes (driving forces)

- a. HRD
- b. Infrastructure
- c. Economic & financial matters
- d. Linkages & collaborations
- e. Institutional & core issues
- f. Diversity in India
- g. University education systems
- h. Threats
- i. Weaknesses

Sub-themes (driving elements) of above mentioned themes

<p>a. HRD</p> <ol style="list-style-type: none"> 1. Trained manpower 2. Number of manpower 3. Quality teachers 4. World class expertise 5. Hardworking & honest people 6. Cheap labor available 7. English speaking faculty 8. Motivation/Incentives 9. Training & exposure 10. Faulty selection on merit criteria 11. Personal problems 12. Placement cell 13. International exposure 14. Recognition of talent 15. Accountability 16. Professional jealousy 17. Work culture 18. Employment opportunities 19. Exploration of talent <p>e. Institutional & core issues</p> <ol style="list-style-type: none"> 1. Centers of excellence 2. Identification of Niche area 3. Niche area dry land farming 4. Niche area plant breeding 5. Niche area hybrid seed production 6. Niche area sustainable agriculture 7. Niche area dairy/sheep/goat/poultry 8. Niche area medicinal & aromatic plants 9. Indian traditional products 10. Potential in various commodities 11. ICAR-SAU-EDU-RES-EXT systems 12. Cooperatives 13. Database on agricultural research 14. Democratic relation with outside world 	<p>b. Infrastructure</p> <ol style="list-style-type: none"> 1. Infrastructure & living conditions 2. Maintenance 3. Games facilities 4. Basic amenities 5. Hygienic & sanitary conditions 6. Power availability 7. Professionally useful facilities <p>g. University education systems</p> <ol style="list-style-type: none"> 1. Large network of agril.univ 2. Curriculum of international standard 3. Variety of courses 4. English as a medium of instruction 5. Quality teaching 6. Guru-sishya education system 7. National standards 8. International standards 9. Need based courses 10. Practical in course curriculum 11. Accreditation 12. Periodic syllabus up gradation 13. Professional approach 14. Online education (e- learning) 15. Distance education 16. Only mediocre prefer agriculture higher education 17. Joint venture 18. Twining programme 19. Competitive spirit 20. Monitoring system 21. Govt regulations 22. Competency in selected areas 23. Research system <p>f. Diversity in India</p> <ol style="list-style-type: none"> 1. Diversified culture 2. Variety of foods 3. Rich depository of livestock, wild animals, plants 4. Germplasm 5. Environment 6. Aspects of Indian culture like homely treatment, service of others, yoga, meditation etc. 7. Diversified geographical, climatic, cropping systems available. 8. Cultural deterioration 	<p>c. Economic & financial matters</p> <ol style="list-style-type: none"> 1. Funds 2. Fee structure 3. Cost of living 4. Cost of education <p>h. Threats</p> <ol style="list-style-type: none"> 1. No threat 2. Theft of resources 3. Theft of research material 4. Intellectual property rights 5. Take away IP, knowledge, ideas 6. Competition 7. Foreign student may not cope up with Indian conditions 8. Spread of diseases 9. Neglect of national students 10. Health hazards 11. Job threat 12. Good infrastructure of foreign universities abroad 13. Maintain education standards 14. Dominance of foreign students 15. International accreditation 16. Easy to establish campuses abroad 17. Theft of Indian germplasm 18. Infiltration of undesirable western culture 19. Brain drain 20. Faculty shift to foreign university campus in India 21. Faculty shift to university abroad 22. Student shift to foreign university campus in India 23. National security 	<p>d. Linkages & collaborations</p> <ol style="list-style-type: none"> 1. Faculty exchange 2. Projects 3. Workshop/Seminar 4. MoUs 5. Needy/target countries 6. SAARC countries 7. Semi arid region countries 8. Linkage with industry 9. Communication 10. Alumni 11. Inter institutional mobility 12. Interaction with other countries 13. Student exchange 14. Cultural & social linkage 15. Democratic values 16. Govt. attitude & support 17. Allocation of seats to foreign students 18. Model campuses 19. Franchises <p>i. Weaknesses</p> <ol style="list-style-type: none"> 1. Red tapism & corruption 2. Supremacy of beaurocrats 3. Political interference 4. Castism, religion, region feelings 5. Management constraints 6. Lack of regulations 7. Multiple regulatory bodies 8. Projecting India into poor light 9. Inadequate publicity 10. Lack of websites 11. Institutional weaknesses
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