IASRI
newsletter
ICAR

Volume XVII April-June, 1991 No. 2

Growth and Instability in Crop output in Uttar Pradesh— A Long Term Perspective

Measurement of instability in agricultural production and identification of sources of instability is an active area for research. In this context the pattern of growth and instability in the output of various crops in U.P. has been examined over a long period of time (1891-92 to 1985-86). For this purpose, the period has been split into three sub-periods : (1) 1891-92 to 1946-47, (ii) 1949-50 to 1965-66, and (iii) 1966-67 to 1985-86, and time-series data on area, production and yield of all the major crops of Uttar Pradesh utilized.

For measuring per annum increase in area and yield of various crops, linear and exponential functions of time were fitted to the values of these variables during the different periods. It was observed that linear functions were a good fit and as such these were selected for further analysis. For measuring the magnitude of fluctuations within various periods a coefficient called measure of relative fluctuation (MRF) has been defined and used.

It was observed that area played a major role relative to yield in increasing or decreasing output of various crops in Period II over Period I, with the exception of bajra, wherein yield contributed more (190%) to increased production inspite of the fall in acreage (−73%). While comparing the performance of Period III over Period II, it was observed that the share of yield in total output was higher as compared to area in rice (65%), maize (83%), jowar (495%), bajra (128%) and sugarcane (53%). The corresponding figures for area were 17%, 11%, 89%, −129% and 37% respectively. In case of wheat, the area and yield both contributed almost equally (32%). The results also revealed that instability in the output of two important crops of the state viz. wheat and sugarcane declined consistently over the three successive periods. Though production of rice increased considerably during the two post-independence periods, the increase was higher in the later period. The instability in rice output also increased simultaneously due to wide fluctuations in yield.

Estimation of Broiler Production

Broiler today occupies a place of pride in poultry production. Broiler meat is preferred to other traditional meats namely mutton, beef, sea foods and pork as it is more economical and nutritive. Planning of development programmes in poultry on sound lines and as also for setting up canning industry requires estimates of production of broilers and culled birds. The National Commission on Agriculture also felt that beside bacon, another potential and profitable source of meat is of broilers.

Estimates of annual broiler meat production in an area requires information on the number of day-

old chicks supplied by the hatcheries to broiler rearing farms operating in the area, mortality and cullings till birds reach marketing stage, their body weights at disposal and dressing percentage. These parameters can be put in the following mathematical formulation for estimating the annual broiler meat production (P) in an area as

$$P = N (1-u) w.d.$$

where

N = number of day old chicks sold by the hatcheries during the year ;

u = depletion rate including both mortality and culling ;

w = average body weight of the broiler at disposal ;

d = percent dressed weight.

All the parameters used in the above formula have to be estimated except the parameter N which sometimes is known. This is when the number of day old chicks supplied to the farms can be obtained from the hatcheries without ambiguity. In case the hatcheries are also supplying chicks to farms outside the area under study or the targetted area farms are purchasing chicks from hatcheries which are outside the area for which production is being estimated one has also to estimate the number of day old chicks purchased (N). In addition the vital characteristics and body weight have to be estimated for which a representative sample of broiler rearing farms will have to kept under observation for collection of relevant data.

The vital characteristics and body weight were estimated utilizing the data collected under 'Pilot survey to develop statistical models for production and culling patterns in poultry' conducted by the Indian Agricultural Statistics Research Institute. Seasonwise production estimates of broilers meat are given in the Table. The annual broiler meat production in each season has been estimated assuming a percent dressed weight of 73% (Directorate of Animal Husbandry, Maharashtra 1988).

Table : Annual meat production in poultry farms of Union Territory of Delhi during 1986-87

Season	Estimated No. of chicks purchased (in lakh)	Depletion rate in percent	No. of broilers available for consumption (in lakh)	Average live weight/broiler at the time of sale (in kg)	Net meat production (in tonnes)
Summer	5.44 (17.0)	3.21	5.26	1.20	461
Rainy	4.54 (19.1)	3.32	4.39	1.31	420
Winter	9.62 (19.2)	3.48	9.29	1.25	848

Note : Figures in brackets indicate the percentage S.E.

The total broiler meat production in commercial poultry farms in the Union Territory of Delhi during 1986-87 was estimated to be 1729 tonnes. Of this about 50 per cent was in winter season and 25 per cent each in the other two seasons.

Computing Science

E.D.P. System Utilization

The B – 4700 system was run on two shifts from 8 AM to 8 PM on all working days for production, testing and listing jobs. As the B-4700 system is to be replaced with Super-Mini DCM 486 System with LAN, more and more computing work is being transferred on Micro-computers.

All the 7 PC,s and SX-386 AT System installed in the Centre were made available to users from 8 AM to 8 PM for production jobs and software development and learning purpose.

On B-4700 system, about 271 production jobs, 118 listing jobs

and 226 testing jobs were undertaken.

On PC system, 2693 hours of work was carried out by about 207 users including students of various computer courses.

Scientific support

During the quarter, 6 Ph.D., 5 M.Sc. students and 4 other research workers were provided with programming help in their research data analysis.

Data-Entry Unit

D.E. Unit of the Division used punch machines and data entry machines for data preparation on cards and floppies and carried out the following jobs :

(i) No. of data batches created : 270

(ii) No. of batches transferred to tape from floppies and from tape to floppies : 220

(iii) Total number of data records on floppies created : 1.26 lacs

(iv) Total number of data records transferred from floppy to tape and from tape to floppy : 1.73 lacs

Advisory Services

The technical advice and guidance were rendered to research workers and students of the various research institutes, agricultural universities and other research organisations in planning of their experimental investigations and statistical analysis/computerisation of their research data as also in regard to research projects referred to the Institute by the ICAR and other organisations. Special mention may be made of the technical advice and guidance given to the following :

Sample Survey Methodology and Analysis of Survey Data

— Joint Secretary and Extension Commissioner, Directorate of Extension, Govt. of India on study of functioning of Monitoring and Evaluation Units in different states.

— DDG, ICAR for planning of experiments under AICARP (ICAR).

Field Survey Work

Field Training

Field training was imparted in connection with the following projects :

— Crop estimation surveys on fruits, vegetables and minor crops at Hoshiarpur (Punjab)

— Survey methodology to study economics of keeping goats at Mathura

— Estimation of cost of production of sheep and wool at CSWRI, Avikanagar and IASRI, New Delhi

Field Supervision/Inspection

The field work of the following projects were inspected/supervised by the Officers of the Institute :

— Planning, designing and analysis of data of Long-Term Fertilizer Experiments conducted under the AICARP on Long Term Fertilizer Experiments at Bangalore and Coimbatore.

— A sampling study on utilization of cross-bred working animals vis-a-vis non-descripts in district Kathua.

Library and Documentation Services

Resources Building

(i) Books procured 17

(ii) Reports procured 30

(iii) Journals procured 126

Reprographic Services

Number of pages of scientific and technical nature reprographed and jobs attended 253 jobs and 17892 pages

Library Usage

(i) Number of readers who consulted the library 6000

(ii) Number of publications issued from the library 6700

(iii) Number of reprints issued to users 20

Papers Published

1. Arya, SN (1991). A survey of demographic research relating to bovine populations in rural India. *Agricultural Review, 12(1)* : 37-48.
2. Chandrahas and Singh, BH (1991). Study of sample size in surveys on crop yield forecasting. *Agri. Sci. Digest, 11(1)*: 11-15.
3. Kathuria, OP; Srivastava, AK; Singh, KB and Khatri, RS (1991). Factors affecting quality of data in agricultural sample surveys. *Recent Advances in Agricultural Research : 170-178.*

Papers Accepted for Publication

1. Bhatia, VK; Narain, P and Malhotra, PK—Comparison of culling patterns of different categories of dairy animals—non parametric approach. *Indian J. of Dairy Science, March, 1992.*
2. गुप्ता, हरीश चन्द्र—कटाई के समय फसल की क्षति, **हिन्दी प्रसारिका, वार्षिक संस्करण**
3. Mahajan, RK and Srivastava, AK—Sampling from two dimensional populations. *J. of Indian Soc. Agri. Statistics.*
4. Muralidharan, K and Jain, JP—Response to selection under non-random mating. I. Partitioning genetic variance. *Biom J.*
5. Muralidharan, K and Jain, JP—Response to selection under non-random mating. II. Prediction. *Biom. J.*
6. Narain, P; Jain, JP and Pandey, RK—Statistical research in agriculture in nineties. *Annals of Agricultural Research.*
7. Rana, PS—Modelling in animal nutrition. *Agricultural Review.*
8. Saksena, Asha; Mehta, SC and Bhargava, PN—Drought threshold for a rainfed crop. *J. of Indian Soc. of Dryland Agriculture.*
9. Singh, Jagmohan and Singh, BH—Forecasting of yield of field crops in flood-affected areas in UP. *J. of Agricultural Sci. Digest.*
10. Singh, Randhir; Goyal, RC; Saha, SK and Chhikara, Raj S —Use of satellite spectral data in crop yield estimation surveys. *International J. of Remote Sensing.*
11. Verma, D and Jain, JP—Admissible correlation estimator of heritability. *J. of Indian Soc. Agri. Statistics.*

Seminar Association

Fifteen seminars were held in the Institute which constituted 9 seminars by students, 5 by the scientists of the Institute and one entitled 'Individual consumer environmental protection' by Shri KS Aneja. Honorary Chief Executive, Consumer Education on May 4.

Papers Presented at Workshops/Symposia/Conferences

S. No.	Author	Paper Title	Programme Title	Venue	Period
1.	Saksena, Asha Narain, P Bhargava, PN	Risk management in dryland agriculture-A case study	International Conference on Extension Strategy for Minimizing Risk in Rainfed Agriculture	ISE'E, New Delhi	April 06-09

Workshops/Conferences/Training Programmes Attended by the Scientists

S. No.	Name of the Scientist	Programme Title	Place	Period
1.	Dr SK Raheja Smt. Asha Saksena	International Conference on Extension Strategy for Minimizing Risk in Rainfed Agriculture	ISE'E, New Delhi	April 06-09
2.	Dr SK Raheja	Regional Workshop (Eastern Region) of All India Coordinated Project on Cropping Systems Research	Patna	April 29
3.	Dr SK Raheja	Regional Workshop (Western Region) of All India Coordinated Project on Cropping Systems Research	Pune	May 10
4.	Sh TB Jain Sh OP Dutta	Productivity and Impact of Research : Scientometric and Bibliometric Measures and Influencing Factors	NAARM, Hyderabad	June 25-29

Miscellaneous

Appointments

— Shri Lakhmia Chand was appointed as Reference Assistant in the pay scale of Rs. 975-1540 w.e.f. April 09.

— Shri Rajinder Singh was appointed as Zerox Operator (ad-hoc) in the pay scale of Rs. 950-1500 w.e.f. April,12.

Transfers

— Shri JR Nirwal joined this Institute as Senior Administrative Officer from Indian Sugarcane Research Institute, Lucknow on May 10.

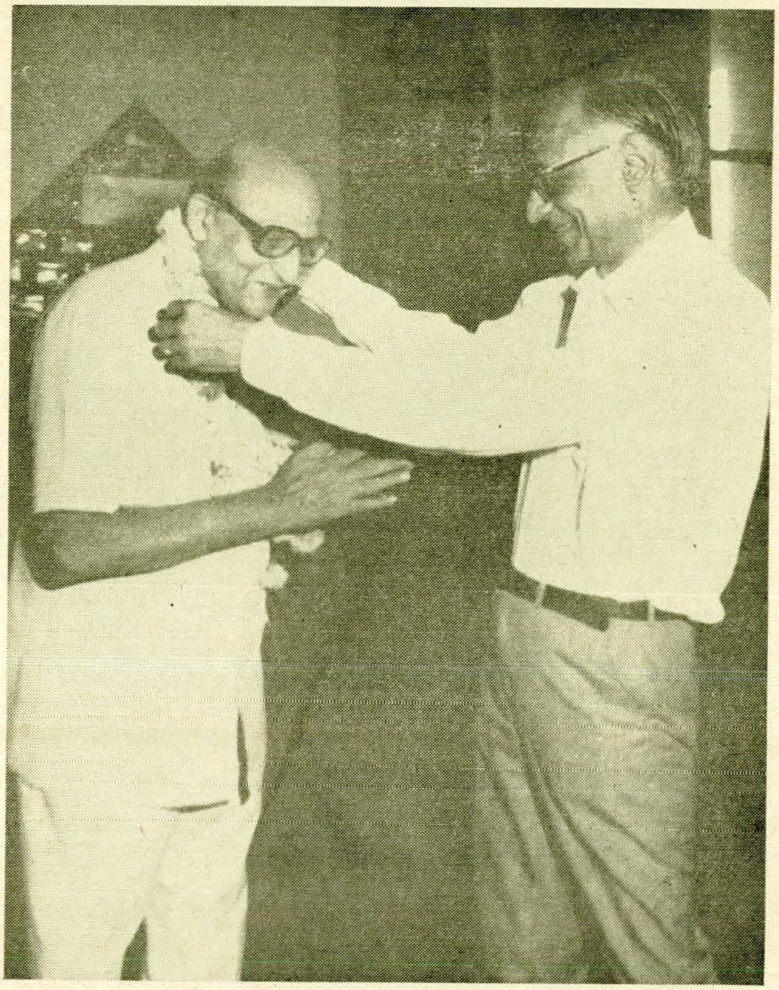
— Smt Sangeeta Duggal Joined the Institute as Finance and Accounts Officer from ICAR Headquarters on May 13.

Retirement

— Shri PN Soni, Principal Scientist retired on April 30.

Resignation

— Shri Kashi Prasad, Technical Assistant (Stat.) resigned on June 12.



Shri PN Soni was given affectionate send off on his retirement

Ad-hoc Training Programme/Lectures

S. No.	Name of the Programme	Dates	No. of trainees	Agency sponsoring the programme	Lecture delivered by
1.	M. Stat., ISI, Calcutta	June 06	30	CSO, New Delhi	Dr SK Raheja, Sh PN Bhargava, Dr PC Mehrotra, Dr BS Sharma Dr Ranjana Agrawal, Sh Shanti Sarup
2.	JCC in Statistics-specialised training in 'Organisation of Large Scale Sample Survey'	June 11-18	3	CSO, New Delhi	Dr HP Singh, Dr PC Mehrotra, Dr AK Srivastava, Sh VS Rustogi, Dr MG Mittal, Dr Shivtar Singh, Dr HVL Bathla, Sh Anand Prakash, Sh TB Jain, Sh RL Rustagi, Sh KB Singh, Dr KK Tyagi, Sh MS Batra, Dr DL Ahuja, Sh SN Arya, Sh KPS Nirman, Sh Satya Pal, Sh JP Goyal and Sh HC Gupta.

Foreign Assignment

— Dr SS Shastri, Scientist (SG) was deputed for a period of two weeks under Indo-Syrian Bilateral Agreement to Damascus, Syria during May 6-20. He worked in Atomic Energy Commission, Damascus, Syria and delivered a series of lectures to researchers (Post Doctorates) and employees working in various disciplines in Department of Agricultural Applications.

Joint Staff Council

— A meeting of the Joint Staff Council was held on May 25 to discuss various agenda items.

Hostel Activities

* With the approval of the general body of the students' hostels, Shri Rajendra Prasad was elected as the Prefect with effect from June 15 for the remaining period of the term of the executive in place of Mr. Debasis Mazumdar who had requested for relief. Earlier, the executive met the Director and decided to celebrate the Students' Annual Day on July 2, 1991 alongwith the Annual Day of the Institute.

Monitoring Cell

The following items of work were undertaken :

— Monitoring Report of on-going research projects for the operative period ending March 31, 1991.

— RPF's for one division for the years 1983 to 1989 were sent to ARIC, ICAR.

— E.F.C. Memo (Memorandum for Expenditure Finance Committee/Project Implementation Committee of DARE) for 1991-92 was prepared and sent to ICAR.

— Requisite information regarding Research Projects of SSM and ASD division for the period 1983-89 in connection with the questions asked by an Ex. M.P. was prepared and sent to him.

Participation in Meetings, Discussions, Committees etc.

Dr SK Raheja

— Chaired

* The meeting of the IJSC held on May 25 at the Institute.

* The meeting of National Committee on Hindi Terminology for Statistical Text Books held on May 25 at IASRI.

*संस्थान की राजभाषा कार्यान्वयन समिति की 10 जून को हुई बैठक।

— Attended

* The meeting of the state level committee for planning of

surveys on fruits and vegetables held at Chandigarh on May 27.

* The meeting of the Panel on Statistical Methods for Quality and Reliability (MSD-3) organised by Bureau of Indian Standards, New Delhi on June 14.

Dr RK Pandey

— Attended the meeting of "Hindi Implementation Committee" of the Institute on June 10

Dr HVL Bathla

— Attended the meeting of ICAR Scientific Panel for "Fisheries" on June 25.

Sh SN Arya

— Convened a meeting of the Institute Joint Staff Council on May 25.

IASRI Publications

— A comparative study of some methods for estimating mortality rates in bovines (1989).

By SN Arya and UG Nadkarni

— Pilot sample survey for estimation of cost of cultivation of oilseeds and pulse crops (1991).

By AK Banerjee, DL Ahuja, VK Jain, OP Kathuria and SK Raheja.

— Pilot studies on pre-harvest forecasting of yield of groundnut crop on the basis of data on biometrical characters, weather variables and agricultural inputs, Rajkot district (Gujarat), 1984-86 (1991).

By BH Singh, RC Jain and Madan Mohan

Book Published

— Recent Advances in Agricultural Statistics Research (1991) by (Eds) Prem Narain, OP Kathuria, VK Sharma and Prajneshu (Published by Wiley Eastern Ltd , New Delhi).

Other Information

Dr SK Raheja

— Acted as Director of the Institute w.e.f. April 15.

— Acted as Chief Supervisor of the combined competitive examinations for the post of FAO's/AO's conducted by ASRB during June 5-8.

Dr RK Pandey

— Acted as Director, IASRI, New Delhi during April 28-30, May 9-10 and on May 27.

Sh KC Bhatnagar

— Attended the short-training for agricultural inspectors working for 'ON FARM' trials under AICARP on June 17 at HAU, Hissar and imparted instructions for coding and filling of schedules of 'ON FARM' trials conducted in Haryana during 1990-91 in the light of revised technical programme.

हिंदी के प्रगामी प्रयोग में प्रगति

इस तिमाही के दौरान, संस्थान में राजभाषा हिंदी के प्रचार प्रसार एवं प्रयोग से सम्बद्ध कई महत्वपूर्ण मुद्दों पर विचार-विमर्श के बाद निर्णय लिये गये तथा उनके कार्यान्वयन पर जोर दिया गया है।

केन्द्रीय सचिवालय हिन्दी परिषद् की संस्थान शाखा की कार्यकारिणी द्वारा लिए गए निर्णयानुसार सदस्यता-अभियान चलाया गया जिसके अन्तर्गत सैकड़ों सदस्यों ने अंशदान दिया। अप्रैल माह में प्रस्तावित चुनाव कार्यक्रम, अक्तूबर 91 के लिए स्थगित किया गया।

निदेशक महोदय की अध्यक्षता में दिनांक 10 जून 1991 को संस्थान की राजभाषा कार्यान्वयन समिति की बैठक हुई जिसमें गृह मंत्रालय के राजभाषा विभाग से प्राप्त वर्ष 1991-92 के वार्षिक कार्यक्रम पर प्रकाश डालते हुए हिन्दी अधिकारी ने बताया कि भारत सरकार की राजभाषा नीति के कार्यान्वयन के लिए संस्थान पर भी लागू इस कार्यक्रम के लक्ष्यों को मद्वार पूरा करना अपेक्षित है। निदेशक महोदय ने संस्थान के सभी प्रभागानुभागादि से सम्बद्ध सभी अधिकारियों से अनुरोध किया कि वे कार्यक्रम के अन्तर्गत सरकार की राजभाषा नीति पर पूरी तरह अमल करें और निर्णय लिया गया कि संस्थान से सम्बद्ध वार्षिक कार्यक्रम की प्रतियां सभी प्रभागानुभागादि के प्रभारियों को भेजते समय हिन्दी अधिकारी इस वार्षिक कार्यक्रम का संक्षिप्तिकृत लगभग 2 पृष्ठों का एक ऐसा विवरण भी उसके साथ लगाएं जिसमें सभी मदें समाहित हो जाएं। हिन्दी अधिकारी ने बताया कि संस्थान में कृषि सांख्यिकी समाचार नाम से तिमाही हिन्दी संस्करण वर्ष 1984 से निरन्तर प्रकाशित होता आ रहा था किंतु सूखा के प्रकोप के दौरान वित्तीय व्यवस्थाओं में कटौती की दृष्टि से इसका प्रकाशन बीच में बन्द करना पड़ गया था। उनका अनुरोध था कि इस हिन्दी प्रकाशन को फिर से आरम्भ किया जाना चाहिए। निर्णय लिया गया कि कृषि सांख्यिकी समाचार का पुनर्प्रकाशन आरम्भ किया जाए। कम्प्यूटरों में द्विभाषिक प्रणाली प्रारम्भ करने पर विचार-विमर्श के दौरान, संगणक प्रभाग के प्रधान, श्री आर. गोपालन, ने बताया कि अब हमारे संस्थान में कई द्विभाषिक प्रणाली वाले कम्प्यूटर आ गये हैं जिनके माध्यम से देवनागरी तथा अंग्रेजी दोनों ही भाषाओं के अतिरिक्त भी कुछ और भाषाओं का कार्य आरम्भ किया जा सकता है। राजभाषा कार्यान्वयन समिति के अहिन्दी भाषी प्रतिनिधि सदस्य, डा. ए. के. बनर्जी के सेवानिवृत होने के परिणाम स्वरूप हुए रिक्त स्थान पर डा. श्रीनाथ, प्रमुख वैज्ञानिक, का मनोनयन किया गया। संस्थान के मुख्य प्रशासनिक अधिकारी, श्री ज्ञानचन्द शर्मा, ने एक बहुत ही अच्छा प्रस्ताव रखा कि संस्थान के विभिन्न भवनों में उसके प्रवेश स्थानों पर चार-पांच पट्टिकाएं (बोर्ड) लगाये जायें, जिन पर प्रत्येक दिन अंग्रेजी के एक शब्द का हिन्दी रूपान्तर लिखा जाये जिससे संस्थान के अधिकारी एवं कर्मचारी ज्यादा से ज्यादा संख्या में इसका लाभ उठा सकें और हिन्दी शब्दों के प्रयोग सम्बन्धी उनकी जानकारी में अभिवृद्धि हो सके।

□

Published by : Prof Prem Narain, Director, IASRI, New Delhi-110012
Edited and Prepared by : JP Jain, TB Jain, PP Singh, Som Dutt and OP Singh.
Photography by : RC Gupta. Printed by : Yugantar Press, Mayapuri, New Delhi-110064.