



# ARYA

## Attracting and Retaining Youth in Agriculture



**Agricultural Extension Division**  
**Indian Council of Agricultural Research**  
**New Delhi**



**ARYA**

**Attracting and Retaining Youth in Agriculture**



**भाकृअनुष  
ICAR**

**Agricultural Extension Division  
Indian Council of Agricultural Research  
New Delhi**

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त्रिलोचन महापात्र, पीएच.डी.

एफ एन ए, एफ एन ए एस सी, एफ एन ए ए एस

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## FOREWORD

India presently has the largest youth population of 356 million between age group of 10-24 years in the world and almost half of this population (nearly 200 million) live in the rural areas. Realizing the importance of rural youth in agricultural development especially from the point of view of livelihood security and regular income flow, the Indian Council of Agricultural Research through its Agricultural Extension Division is implementing a project entitled “Attracting and Retaining Youth in Agriculture (ARYA)” since 2015-16.

The ARYA project is operational in 25 States through Krishi Vigyan Kendras and one district from each State is participating. The aim of the project is to attract and empower the rural youth to take up various agricultural, and allied sector enterprises for sustainable income and gainful employment in the selected districts.

Under the project, rural youth are identified and oriented towards entrepreneurial skill development and establishment of micro-enterprise units in the areas like apiary, mushroom, seed processing, poultry, dairy, goatry, carp-hatchery, vermi-compost etc.

This document collates the enterprise-wise progress made in the ARYA project for each participating KVK in terms of orientation of youth, formation of groups, establishment of micro-entrepreneurial units, economic gains and employment generation.

My complements to scientists of ATARIs and KVKs for documenting the activities and achievements of the ARYA project. I am sure that this publication would help in providing insights for further improvement and implementation of the ARYA project.

Dated the 04th April, 2019  
New Delhi

(T. Mohapatra)



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## PREFACE

The agriculture in India is now managed significantly by rural women and old aged farmers as rural youth migrate to urban areas for employment. This brings unwarranted pressure on urban bases and depletion of potential human resource from rural areas. However, there is tremendous scope to make agriculture income and employment oriented. In such scenario, rural youth can play crucial role in augmenting agricultural growth through improving resource use efficiency and value addition across the value chain.

Realizing the importance of rural youth in agricultural development, the Indian Council of Agricultural Research has initiated a project on “Attracting and Retaining Youth in Agriculture” (ARYA) during 2015-16 in 25 States through KVKs, one district from each State.

It is envisaged in the project that the rural youth can be attracted in agriculture by providing them gainful employment in rural areas by engaging them in different enterprises which could regularly provide income to them in a sustainable manner.

This document on ARYA indicates that the income from about 17 major enterprises like Apiary, Mushroom, Seed Processing, Poultry, Dairy, Goatry, Carp-hatchery, Vermi-compost etc. can provide average income of Rs. 10,000 to 12,000 per month based upon the economy of scale of the enterprise. I am sure that this publication containing the experiences of implementation of ARYA will encourage youth to seek employment in agriculture and allied sectors.

(A.K. Singh)



## Introduction

In India, over 58% of the rural households depend on agriculture as their principal means of livelihood. As per Ministry of Statistics and Programme Implementation, the share of agriculture and allied sectors was 16.4% of the Gross Value Added during 2017-18 at current prices. Average monthly income of farmer's households is Rs. 6426, of which 47.9% of income comes from cultivation.

Till recent past, the focus in agriculture has been on increasing farm productivity. Today, the main concern has shifted from higher farm production to higher returns on their investments. However, agriculture in India is faced with multiple challenges for accelerating agricultural growth. These challenges may include low farm productivity, limited access to inputs and market, fragmentation of land, natural resource degradation, climate change, non-remunerative price and limited surplus for value addition.

In this agricultural scenario, the Centre for Study of Developing Societies, based in Delhi, found that given an option majority of farmers in the country would prefer to take up some other work. The survey of 5,000 farm households across 18 states says that 76% farmers would prefer to do some work other than farming and of this, 61% of these farmers would prefer to be employed in cities. This migration results in “feminising agriculture”, which means women get increasingly absorbed in agricultural and allied activities. According to Census 2011, there has been a 24% increase in the number of female agricultural labourers between 2001 and 2011, from 49.5 million to 61.6 million. Thus, on the one side, there is a need to diversify agriculture and make it more remunerative with the thrust on value addition and processing, on the other hand, the rural youth are moving away from agriculture sector.

Youth are expected to play a vital role in the much-anticipated transformation of agriculture in India. According to national youth policy, persons in the age group of 15-35 are defined as young. At present, 35% of the total population is in the age group of 15-35 years, out of which 75% live in rural areas. Migration of rural youth to cities is around 45% in the country, and it is estimated that only about 5% of youth are engaged in agriculture. In developed countries, skilled workforce is in the range of 60% to 90% of the total workforce, whereas in India, the skilled workforce is as low as 5% (20-24 years age group).

There are challenges in empowering the youth to improve their skills and to remain in the agriculture as a source of livelihood in rural situation. Creation of successful economic models in the villages is crucial to catalyse and energize youth to become entrepreneurs in rural areas and guide others in their vicinity.

Creating interest and building confidence among rural youth in agriculture, is difficult but not impossible, as the available evidences of profitable agriculture have proved under varied situations. Retaining youth in agriculture, is therefore strongly linked to agriculture. There is a noticeable increase in the migration of rural youth to urban areas, in search of better livelihood opportunities due to the apparent differences in basic amenities, communication, health and education facilities between rural and urban areas.



## ARYA-Attracting and Retaining Youth in Agriculture



Realizing the importance of rural youth in agricultural development especially from the point of view of food security of the country and to empower rural youth, the Indian Council of Agricultural Research (ICAR) has initiated a programme on “Attracting and Retaining Youth in Agriculture (ARYA) during 2015-16. Under this scheme, special efforts are being taken up to attract the rural youth under the age of 35 years in agriculture to provide income generating opportunities and engage them in agriculture.

The oriented youth groups may function as role model for other youths by demonstrating the potentiality of the agri-based enterprises and also by imparting training to others. Skill development of rural youth is helping in regaining their confidence levels to pursue farming as a profession, besides generating additional employment opportunities to absorb under employed and unemployed rural youth in secondary agriculture and service related activities in rural areas. Under the project, 4280 youths in various groups have been oriented for establishing micro-entrepreneurial units in 25 districts listed in Table 1 taking up various enterprises as listed in Table 2. The number of youth engaged in different enterprises is given in Table 3.

**Table 1: State-wise list of ARYA centers**

STATE	DISTRICT	STATE	DISTRICT
Haryana	Gurgaon	Uttar Pradesh	Muzaffarnagar
Punjab	Bathinda	Andhra Pradesh	Nellore
Himachal Pradesh	Hamirpur	Telengana	Nalgonda (Kampasagar)
Jammu & Kashmir	Kathua	Maharashtra	Nagpur
Bihar	East Champaran	Gujarat	Rajkot
West Bengal	Nimpith (South 24-Pargamas)	Rajasthan	Banswara
Manipur	Senapati	Madhya Pradesh	Gwalior
Nagaland	Wokha	Chhattisgarh	Dantewada
Assam	Karbi Anglong	Odisha	Nayagarh (Panipola)
Mizoram	Lunglei	Karnataka	Bengaluru-Rural
Uttarakhand	Haridwar	Tamil Nadu	Kanyakumari
Sikkim	North Sikkim	Kerala	Kannur
Jharkhand	Gumla		





**Table 2: List of identified Enterprises**

Sl.No.	Enterprise	Sl.No.	Enterprise
1.	Goat rearing	12.	Turkey farming
2.	Protected cultivation	13.	Poultry
3.	Mushroom production	14.	Piggery
4.	Bee keeping	15.	Large cardamom
5.	Horticulture	16.	Pineapple
6.	Commercial floriculture	17.	Fruits and vegetable nursery
7.	Broiler farming	18.	Fruits and vegetable processing
9.	Betelvine cultivation	19.	Vermicompost
10.	Fish hatcheries	20.	Lac cultivation
11.	Duck farming	21.	Value added products of banana and coconut

**Table 3: Number of youths oriented and entrepreneurial units established**

S.No.	Major Enterprises	No of youths oriented	No. of youths established their own entrepreneurial units	Oriented/Established (Col. 4 / Col. 3)
1	2	3	4	5
1	Mushroom Production	847	291	34%
2	Poultry	792	280	35%
3	Lac Cultivation	230	100	43%
4	Pig Farming	387	91	31%
5	Bee keeping	406	82	20%
6	Fishery	80	80	100%
7	Goat Farming	221	69	31%
8	Broiler duck farming	55	46	83%
9	Value Addition	40	40	100%
10	Nursery Management	72	13	18%





### KVK-BATHINDA

The major crops of Bathinda district are cotton, rice, wheat, mustard, citrus, orange, lemon, mango litchi potato, chilli and onion. The district has potential for producing honey, mushroom and value addition and processing of fruits and vegetables. Lack of assured market, price fluctuation, lack of canning and processing units, refrigerated storage, poor quality of spawn, technical and awareness problems are the major issues in these enterprises. Rural areas predominantly occupied by poor comprises of marginal farmers and landless labourers have low income and suffer from malnutrition. To improve the household income as well as quality diet, poultry production, bee-keeping, mushroom cultivation and value addition and processing were undertaken in the ARYA Project. After undergoing training on these enterprises from KVK Bathinda, youth in the project villages took up entrepreneurship in these areas to augment their income.

Bathinda district has more than 150 beekeepers (>30000 bee hives) with 9500 q/year honey production in Bathinda district. The mushroom production is 16000 metric tonnes in Punjab and 56 metric tonnes in Bathinda.

After up taking training, many of the trainees took up secondary activities that produced processed honey, mushroom products and other products like pickles, chutneys, cheese, khoa, gujrella, under brand names. This way their produce has been sold in a better manner.

Non-availability of quality spawn, lengthy method of compost preparation, less demand for processed food at village level, lack of moral as well as financial support to the rural families, and problem of marketing are the constraints hindering commercialization of mushroom enterprises. Details of the coverage and performance of different enterprises are enumerated below:





### Enterprise 1: Bee keeping

- No. of youth trained : 30
- No. of groups formed: 3
- No. of youth established their own units: 7
- No. of youth running the unit sustainably: 3
- Average size of the unit: 15 hives
- Cost of production per unit: Rs. 45,000
- Sale value of the produce: Rs. 75-80/kg
- Net economic gains (Rs./unit/year): Rs.60,000
- Employment generation: 7 youth employed round the year



### Enterprise 2: Value addition and processing

- No. of youth trained: 60
- No. of groups formed: 5
- No. of youth established their own units: 27
- No. of youth running units sustainably: 27
- Sale value of the processed products : Ranging from Rs. 100 to Rs. 200/kg
- Net economic gains (Rs./unit/year): Rs. 6000-12000
- Employment generation: 10 youth employed round the year



### Enterprise 3: Mushroom production

- No. of youth trained: 30
- No. of groups formed: 3
- No. of youth established their own units sustainably: 10
- No. of groups running the units: 2
- Average size of each unit: 6 q bhusa
- Cost of production per unit: Rs. 7000
- Sale value of the produce: Rs. 90/kg
- Net economic gains (Rs/unit/cycle): Rs. 2000
- Employment generation: 10 youth employed round the year





## H I M A C H A L P R A D E S H KVK-HAMIRPUR

The major crops of Hamirpur district are cereals like wheat, maize, rice, barley, pulses like blackgram, chickpea, lentil, oilseeds like toria, sesamum, rapeseed mustard, fruits like mango, citrus, litchi, amla, guava and plum and vegetables like bhindi, cauliflower, cucumber, tomato, onion, peas and potato. Almost 60-70% of the farmers in Hamirpur district belong to the category of small and marginal farmers and landless labourers. Women play a vital role in farm and household activities.

The training programmes and exposure visit of selected rural youth on the mushroom cultivation were conducted. The materials like spawn, polythene were also provided to the trainees after training programme. Apart from this the bamboo made structure for mushroom cultivation are being made at some of the mushroom trainee's houses. They are being given technical support time to time.

For post-harvest value addition, training programmes for rural youth groups for 3-7 days were also organized, where more emphasis was given on practical demonstrations. This group was also exposed to the local post-harvest demonstration units within the district.

Nursery raising entrepreneurship was initiated for cultivation of cash crops in the poly houses. During the off-season nursery of vegetable crops was also raised in the poly houses when it was not possible to rise in open conditions due to adverse climatic conditions especially for cucurbits. Enterprise-wise details with the progress achieved are given below:

### Enterprise 1: Mushroom Production

- No. of youth trained: 104
- No. of groups formed: 3
- No. of youth established their own units: 32
- No. of youth running the units sustainably: 25
- Average size of each unit: 100 – 150 bags per batch
- Cost of production per unit: Rs. 10000/batch
- Sale value of the produce Rs. 150/bag
- Net economic gains (Rs/unit/cycle): Rs. 45000
- Employment generation: 32 youth employed for 180 days a year





**Enterprise 2: Post harvest value addition of fruits and vegetables**

- No. of youth trained: 100
- No. of groups formed: 4
- No. of youth established their own units: 36
- No. of youth running the sustainably: 22
- Average size of each unit: There is no particular size of this enterprise because at the onset of season of the fruits and vegetables whichever is available is being processed.
- Cost of production per unit: Rs. 6167 per unit
- Sale value of the produce: Rs. 300/kg of sweet
- Net economic gains (Rs./unit/year): Rs.240000
- Employment generation: 36 youth employed for 180 days in a year



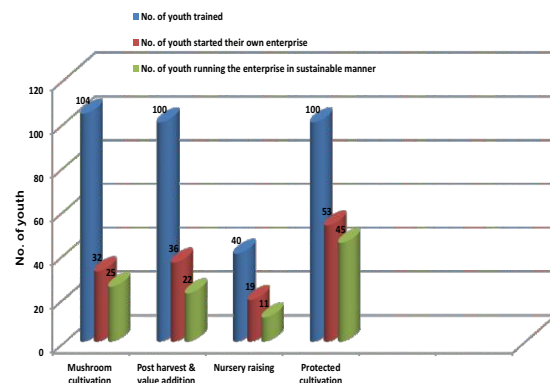
Orientation on value addition

**Enterprise 3: Nursery raising and protected cultivation**

- No. of youth trained: 100
- No. of groups formed: 3
- No. of youth established their own units: 45
- No. of youth running the units sustainably: 45
- Average size of the unit: 250 m<sup>2</sup> (varies from 105 to 500 m<sup>2</sup>).
- Cost of production per unit: Rs. 60000 per unit.
- Sale value of the produce: Seedlings of vegetables Rs.100 per 100 seedling and saplings of cucurbits Rs.10/seedling.
- Net economic gains (Rs./unit/year): Rs. 170000 per unit per year from polyhouses and Rs.210000 per unit per year from nursery of vegetables in open conditions.
- Employment generation: 45 youth employed for 105 days in a year



Protected cultivation unit of tomato



Number of youth trained in enterprises



### KVK-HARIDWAR

Major crops of Haridwar district are rice, wheat, lentil, groundnut, mustard, citrus, mango, litchi, potato, cabbage, tomato and cauliflower. Rearing of livestock and poultry are also important activities in the district. Haridwar district has good potential for mushroom cultivation due to growing market opportunities in neighbouring cities. Further, there is also increased demand for poultry products. Keeping in view, growing consumer demand for honey, mushroom and poultry, KVK Haridwar is promoting bee keeping, mushroom production and broiler farming under ARYA.

KVK Haridwar selected and trained the youth from a cluster of villages of the district for these enterprises. As part of the five days training on mushroom cultivation, exposure visit to successful units were conducted for these trainees. Input for oyster mushroom cultivation like seed, straw and polythene bags were provided for youth under ARYA project. Rural youth having aptitude interest and interest in broiler farming and having supporting situations were trained on the theoretical and practical aspects. Post-training, broiler farming units of 350 chicks each were provided along with the medicines, equipment and feed. Technical backstopping was also extended to support their new enterprises through regular field visits.

#### Enterprise 1: Broiler farming

- No of youth trained: 61
- No of groups formed: 16
- No. of youth established their own units: 16
- No. of youth running the units sustainably: 8
- Average size of the unit: 350 per unit
- Cost of production per unit: Rs. 210000
- Sale value of the produce: Rs. 130 per bird
- Net economic gains (Rs./unit/year): Rs. 63000
- Employment generation: 30 youth employed for 300 days in a year





Beekeeping is a very remunerative agri-enterprise for unemployed rural youth belonging to small holders as well as land-less categories. Beekeeping has been successfully practiced after acquiring necessary skills in honey, wax, pollen, brood and propolis production and pollination management. The training included scientific management of beehives, establishment of apiary, bee flora, seasonal management of beehives, migration, disease management and pollination management. As part of the critical inputs, bee colonies were provided and established at trainee's field. Details of the activities under each enterprise and the progress are given below:

### Enterprise 2: Bee keeping

- No. of youth trained : 31
- No. of groups formed: 6
- No. of youth established their own units: 11
- No. of youths who are running the units sustainably: 6
- Average size of the unit: 15 hives
- Cost of production per unit: Rs. 45000
- Sale value of the produce: Rs. 100/Kg
- Net economic gains (Rs./unit/year): Rs. 85000
- Employment generation: 31 youth employed for 300 days in a year



Bee keeping unit

### Enterprise 3: Mushroom production

- No. of youth trained: 40
- No. of groups formed: 8
- No. of youth established their own units: 8
- No. of youth running the units sustainably: 8
- Average size of the unit: 500 bags
- Cost of production per unit: Rs. 154800
- Sale value of the produce: Rs. 70/Kg
- Net economic gains (Rs./unit/year): Rs. 85000
- Employment generation: 40 youth employed for 300 days in a year



Orientation on Mushroom Production





### KVK-KATHUA

The main occupation of the people of Kathua district is agriculture, allied and agro-based activities. The agriculture in Kathua is mostly rain-fed except in small pockets where canal irrigation is available. Animal husbandry, particularly dairy is the secondary source of income of people of Kathua and those who live close to hilly areas of the district also keep a few sheep and goat. Major crops in the district are rice, maize, wheat, pulses and oilseeds. The average profits of farmers of Kathua district can be increased by adoption of less water requiring crops in rain fed areas. Cultivation of vegetable crops, flowers, mushroom cultivation, apiculture and horticultural crops can be safely adopted.

There is immense scope for round the year mushroom cultivation in the district. The total mushroom production in the state of Jammu & Kashmir is around 630 metric tonnes, with ample demand in the market. The farmers are showing keen interest in mushroom cultivation because mushroom cultivation generates more income as compared to other crops. KVK Kathua is promoting mushroom production under ARYA project. Year round cultivation of the mushroom cultivation is being promoted with minimal processing in the form of mushroom pickle, mushroom powder. Hands-on-training is being provided on low cost mushroom production.

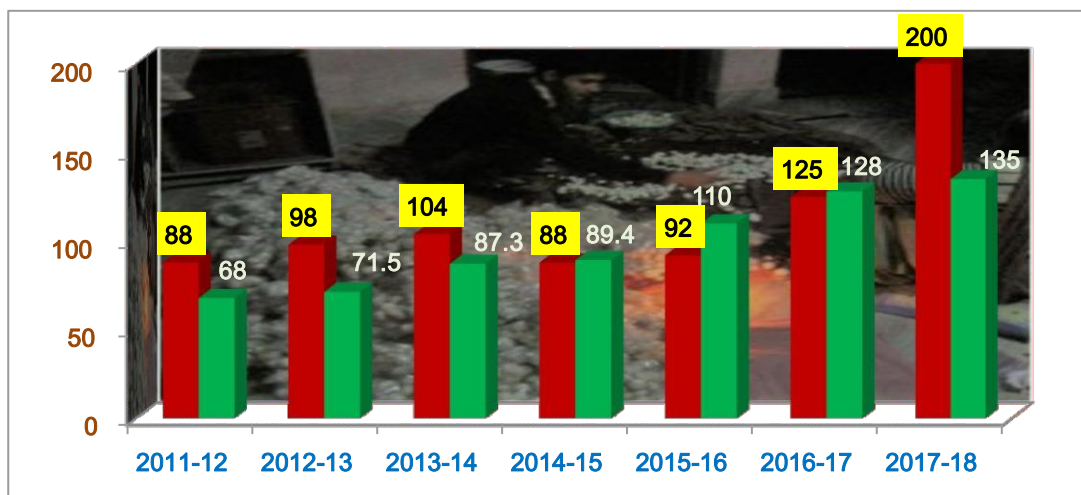
#### Enterprise 1: Mushroom production

- No. of youth trained: 60
- No. of groups formed: 5
- No. of youth established their own units: 26
- No. of youth running the units sustainably: 26
- Average size of each unit: 500 bags
- Cost of production per unit: Rs. 55/bag
- Sale value of the produce: Rs. 60/kg
- Net economic gains (Rs./unit/year): Rs. 52500
- Employment generation: 52 youth employed for 240 days in a year





The farmers of the district were encouraged to grow white button and oyster mushroom during the month of September to March and milky mushroom during the month of June to August to supplement their family income. Annual production of mushroom in the district increased from 517 q in 2010-2011 to 1350 qt. in 2017-2018. Numbers of mushroom grower increased subsequently, after the initiation of programmes of KVK Kathua. During the year 2011-2012, sixty-eight beneficiaries were covered under different activities conducted by Krishi Vigyan Kendra Kathua but in the subsequent years their number rose to 135 till 2017-2018 indicating an increase of nearly 100%.



**No. of Mushroom Growers**      **Production of White Button in tonnes**

**Horizontal expansion of mushroom in the district**



## H A R Y A N A KVK-GURUGRAM

In Gurugram district, cereal crops like wheat, bajra and rice, oilseeds like rapeseed mustard, horticulture crops like guava, aonla, ber and vegetables like chilli, tomato and radish are the major crops. Youth are migrating to Gurugram and Delhi for securing livelihood, although, there is scope for agro-based income generating enterprises.

Under the ARYA project, potential income generating enterprises namely value addition, protected cultivation, goat farming and mushroom production are promoted among rural youth by KVK-Gurugram by orienting youth in entrepreneurial skills. KVK provided technical backstopping rural youth groups to establish micro-entrepreneurial units in different enterprises in the cluster villages including support for establishing market linkages.

The KVK also identified rural youth group and trained in different aspects of protected farming of improved variety of vegetable crops and preparation of seedlings. The KVK also supported establishment of poly-houses and net-houses in the cluster villages. All the 20 rural youth were trained in this enterprise have established enterprise. They are earning Rs. 84000 annually. Nursery to raise seedlings of vegetables (tomato, onion and capsicum) has been taken up in two poly houses.

### Enterprise 1: Protected cultivation

- No. of youth trained: 20
- No. of groups formed: 4
- No. of youth established their own units: 20
- No. of youth running the units sustainably: 16
- Average size of the unit: 100 m<sup>2</sup>
- Cost of production per unit per unit: Rs. 4500-6000
- Sale value of the produce: Rs. 8-10/kg.
- Net economic gains(Rs./unit/year): Rs. 16000-18000
- Employment generation: 40 youth employed round the year





In Gurugram, Aonla is grown in an area of 89 ha with a production of 949 MT. Due to its perishable nature; it is difficult to store or transport aonla fruits over long distances. Realizing that processing of aonla and other locally available fruits and vegetables can increase the profitability of the farmers, rural youth group were identified and trained in different aspects of processing and value addition. In addition, packaging, labelling and branding of the produce and maintenance of quality specifications were also imparted as part of entrepreneurship development under ARYA project. Under the project 304 rural youth were trained and all the youth established enterprise for self-employment. The average annual income of each youth is Rs. 30000.

### Enterprise 2: Value addition

- No. of youth trained: 30
- No. of groups formed: 3
- No. of youth established their own units: 30
- No. of youth running the unit sustainably: 20
- Cost of production per unit per unit: Rs.25000
- Sale value of the produce: Rs. 55000
- Net economic gains (Rs./unit/year): Rs. 30000
- Employment generation: 30 youth employed round the year



Goat farming is one of the fast growing business opportunities in Gurugram and Mewat as demand for goat meat (mutton) is increasing. Under the project, rural youth group are identified and trained in different aspects of goat farming like health management, preparation of quality feed, fodder production and other aspects related to the entrepreneurship development. Goats can be raised for meat, milk, skin and manure. Goat manure can be sold to other farmers to make some additional income or used in own field. Total 10 rural youth were trained in this enterprise. All youth have established enterprise for self-employment.



Goat unit



### Enterprise 3: Goat farming

- No. of youth trained: 40
- No. of youth established their own units: 40
- Average size of the unit: 6 Goat+1Buck
- Cost of production per unit: Rs. 25000
- Sale value of the goats: Rs. 80000
- Net economic gains (Rs./unit/year): Rs. 55000
- Employment generation: 40 youth employed round the year

The KVK formed group of rural youth and trained them on different aspects of mushroom farming like preparation of compost, mushroom farming, processing and packaging including entrepreneurship development. The KVK supported to establish low cost mushroom units in the cluster villages.

Mushroom is an excellent source of protein, vitamins, minerals and folic acid. It is a good source of iron for anemic patient. Total 14 rural youth were trained in this enterprise. All the youth established enterprise for self-employment.

### Enterprise 4: Mushroom production

- No. of youth trained: 14
- No. of youth established their own units: 14
- No. of youth running the units sustainably: 8
- Average size of the unit: 45 m<sup>2</sup> to 200 m<sup>2</sup>
- Cost of production per unit: Rs. 48125
- Sale value of the produce: Sale per unit: Rs. 166492
- Net economic gains (Rs./unit/year): Rs. 118367
- Employment generation: 8 youth employed round the year







### **R A J A S T H A N** KVK-BANSWARA

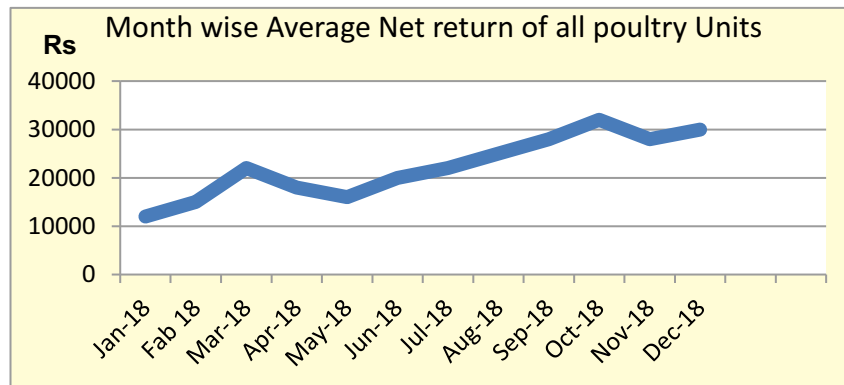
Banswara is a tribal dominant district where cereal crops like maize, wheat and rice constitute 72 % of gross cultivated area. Pulses like black gram, pigeon pea, chickpea and green gram occupied 16% area and oilseeds like soybean constitute about 4% area. The district is having 19 lakh livestock population. Lower profits in agricultural enterprises on one hand and increased work force in farm families on the other are driving youth to migrate to Gujarat and elsewhere for jobs in industries. Agro-climatic condition is ideally suitable for high value horticultural crops and crop diversification. Despite several constraints the district has great scope for attracting rural youth in agricultural sector by creating agro-based income generating enterprises.

Poultry is a very common practice in rural household for income generation but rearing of traditional breed as backyard poultry, poor housing and very poor hygiene are the major bottlenecks in further expansion of the technology. Broiler farming has emerged as one such alternative option for livelihood security and improving the socio-economic status. The KVK considered poultry farming as one of the enterprises to promote entrepreneurship, and the details of the interventions are given below:

#### **Enterprise 1: Poultry production**

- No. of youth trained: 64
- No. of groups formed: 2
- No. of youth established their own units: 20
- No. of youth running the units sustainably: 20
- Average size of the unit: 50-2000 birds
- Cost of production per unit: Rs. 20000-120000
- Sale value of the produce: Birds: Rs. 500/Kg, Broiler: Rs. 75-90/Kg, Eggs Rs.8/egg
- Net economic gains (Rs./unit/year): Rs. 40000-160000
- Employment generation: 32 youth employed round the year





Month wise net return from poultry unit

Goat farming in dry land farming system is particularly suitable for small, marginal & landless laborers. It needs less grazing lands and initial investment is low and involves less risk compared to other livestock-based enterprises and therefore it is economically viable enterprise to the rural youth. They are resistant to diseases and yield more revenue in short duration. Commercial goat farming is becoming more popular in recent times. The goat-farming entrepreneurial activity promoted by the KVK under ARYA is as follows:

**Enterprise 2: Goat farming**

- No. of youth trained: 64
- No. of groups formed: 2
- No. of youth established their own units: 7
- No. of youths running the units sustainably: 7
- Average size of each unit: 20 - 100 goat/herd
- Cost of production per unit: Rs. 5000 per unit of 20 animals
- Sale value: Goat -Rs. 5000 per animal & buck- Rs. 12000 per animal, Milk- Rs. 20-25/litre, Weight of goat 30 kg, value Rs. 380 per kg
- Net economic gains (Rs./unit/year): Rs. 40000-200000
- Employment generation: 7 youth employed round the year







Best quality planting material as an initial investment is well realized factor for persons engaged in horticulture fields. However, good quality and assured planting material at reasonable price is not available. Realizing the potential for production of plants, bulbs, rhizomes, suckers and grafts, skill development of rural youth in nursery raising was considered as one of the areas for self-employment. Nursery plants require due care and attention after having either emerged from the seeds or have been raised from other sources like rootstock or through tissue culture technique. Nursery management activities promoted under the project are as follows:

### Enterprise 3: Nursery management

- No. of youth trained: 22
- No. of groups formed: 1
- No. of youth established their own units: 7
- No. of youth/groups running the units sustainably : 5
- Average size of each unit: 0.5 ha
- Cost of production per unit: Rs. 50000
- Sale value of the produce: Seedling of chilli, Tomato, Brinjal, Onion etc. Rs. 2/seedling. Fruit plants of Mango, Guava, Lemon, and Pomegranate Rs. 10-40/plant
- Net economic gains (Rs./unit/year): Rs. 28000
- Employment generation: 5 youth employed round the year



Nursery unit





### KVK-MUZAFFARNAGAR

In Muzaffarnagar district located in the northern part of Uttar Pradesh, more than 40% of the population is engaged in agriculture. The district is popularly known as “The Sugar Bowl of India”. Sugar and jaggery production are important industries in the district. In addition to the sugarcane, wheat, paddy, pulses like urd, lentil, pigeon pea, potato and oilseeds like mustard and sunflower were also cultivated. Apart from this, livestock, poultry and fisheries are also being practiced. However, there is a need for engaging youth in agriculture by creating awareness about profitable enterprises and developing entrepreneurial skills to get involved in such enterprises.

Bee keeping activity is one of the profitable enterprises in the district. The honey processing and marketing activity can be undertaken by group of rural youths. The thrust is on sale of processed honey instead of raw honey as this value addition will result in increased returns. At present, though bee keeping is practiced in the district, there is a need for carrying out bee keeping in an organised way that too in commercial mode so that youth can be attracted into such agro-based enterprises.

#### Enterprise 1: Bee Keeping

- No. of youth trained: 85
- No. of group formed: 20
- No. of youth established their own units: 4
- No. of youth running the units sustainably: 4
- Average size of the unit: 50 hives
- Cost of production per unit: Rs.2.25 -2.5 lakhs.
- Sale value of the produce: Rs.180-200/Kg
- Net economic gains(Rs./unit/year):Rs. 1.5 -2.0 lakhs
- Employment generation: 4 youth employed round the year





Mushroom production is one of the significant enterprises which can be taken up by rural youth for getting additional income as an allied agricultural enterprise. Under the ARYA project, the rural youth are formed in groups and they were given training on mushroom production technologies. Exposure visits were organized and critical inputs like spawn and compost were given to farmers to facilitate the establishment of the units. The progress achieved is given below:

### Enterprise 2: Button mushroom production

- No. of youth trained : 95
- No. of groups formed: 15
- No. of youth established their own units: 20
- No. of youth running the units sustainably : 8
- Average size of the unit: 40 qtl compost
- Cost of production per unit: Rs. 16000
- Sale value of the produce: Rs. 70/Kg
- Net economic gains (Rs./unit/year): Rs. 31000
- Employment generation: 20 youth employed for round the year



Poultry farming is also very profitable entrepreneurship but scattered across the district. The demand of poultry meat and eggs is increasing day by day as the consumers are more conscious about nutrition and benefits of poultry products in their diet. Hence, the scientific poultry farming by group of rural youth is being promoted as a source of livelihood.

### Enterprise 3: Poultry farming

- No. of youth trained: 80
- No. of groups formed: 5
- No. of youth established their own units: 42
- No. of youth running the units sustainably: 8
- Average size of the unit: 3000-4000 bird
- Cost of production per unit: Rs. 390000-520000
- Sale value of the produce: Rs. 75-100 /Kg
- Net economic gains (Rs./unit/year): Rs. 40000/Cycle
- Employment generation: 42 youth employed round the year





## **B I H A R** KVK-EAST CHAMPARAN

Rural youth are assuming greater significance in East Champaran district of Bihar state. At present, about 35% of the total population is in the age group of 15-35 years, out of which 75% live in rural areas of the district. Attracting youth in agriculture and making agriculture more profitable is a challenge considering the fact that, small holdings are on the rise. In this context under ARYA project, KVK started bee keeping, mushroom production and carp fish spawn production enterprises as alternative and supplementary avenues to provide employment and income to rural youth.

Realizing the vast potential of mushroom for nutritional and economic security, it is considered as an important activity for the youth in the East Champaran district. Many successful entrepreneurs have come up under the guidance of KVK. KVK, has imparted training on mushroom production techniques, improved quality spawn production and on different value addition aspects. Five units of button mushroom are functional round the year with a capacity 0.5 to 2 tonnes in Patna and Vaishali districts. These results prove that rural youth can be stopped from migrating by promoting this enterprise which enhances income and employment.

### **Enterprise 1: Mushroom Production**

- No. of youth trained: 25
- No. of groups formed: 13
- No. of youth established their own units: 25
- No. of youth running the units sustainably: 10
- Average size of the unit: 150 bags
- Cost of production per unit: Rs. 32000
- Sale value of the produce: Rs. 150/Kg
- Net economic gains (Rs./unit/year): Rs. 81000
- Employment generation : 25 youth employed round the year





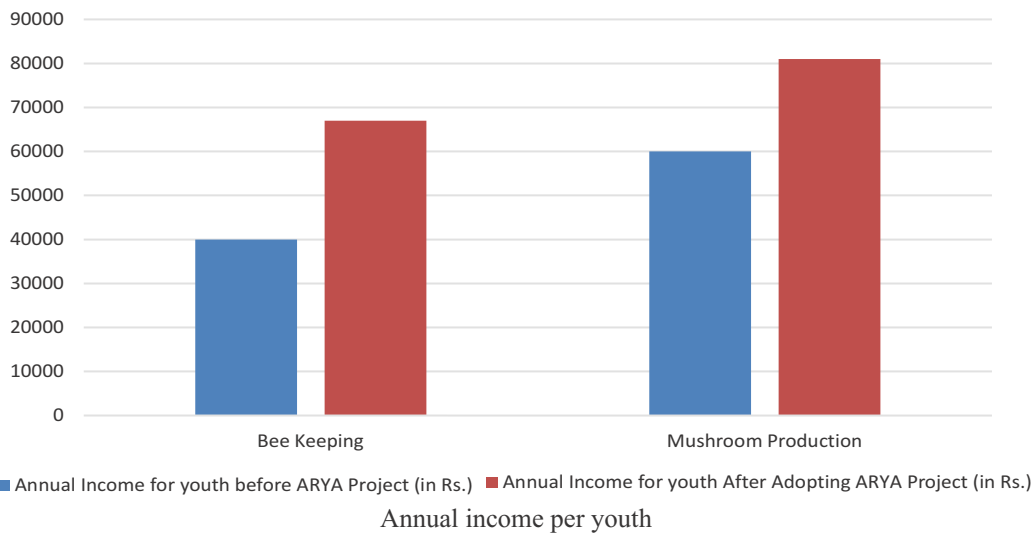
According to the data, 15000 tonnes of honey is produced from litchi orchards grown in area of 11000 hectares. indicating huge scope for the production of quality honey in the district. Before implementation of ARYA project, bee keeping of desi madhumakhkhi (*Apis cer anaindica*) produced less honey due to poor management. With the interventions under ARYA project, the honey production has increased by adoption of scientific techniques and using improved varieties like *Apis mellifera*. This is helping in improving the socio-economic condition and living standard of people in the district by additional income to support their livelihood.

**Enterprise 2: Bee Keeping**

- No. of youth trained: 25
- No. of group formed: 10
- No. of youth established their own units: 10
- No. of youths running the units sustainably: 10
- Average size of each unit: 10 box
- Cost of production per unit per unit: Rs. 56000
- Sale value of the produce in the market: Rs. 250/Kg
- Net economic gains (Rs./unit/year): Rs. 67000
- Employment generation: 20 youth employed round the year



Bee keeping unit





## J H A R K H A N D KVK-GUMLA

Gumla district is predominantly rural in the eastern portion of Jharkhand State. About 18% of area in Gumla district is irrigated. Promoting appropriate agricultural technologies and providing capacity building for establishing micro-enterprises would enable them to engage in agro-enterprises. Under the ARYA project interventions like pig farming, goat farming, lac cultivation and bee keeping were taken up by forming youth groups and orienting them in entrepreneurial skills, modern technologies, providing critical inputs and establishing micro-entrepreneurial units.

Pig farming is an important allied activity of the tribal youth in Gumla district. Before ARYA project, Pig farming was a small scale rearing activity and not as an enterprise. Farmers reared local breed that fetched low returns due to high mortality and poor feed conversion ratio. Malnutrition is also a major problem. Keeping the need, interest, resource and climate, promotion of pig farming enterprise was taken up under ARYA project with the intervention support of improved breed, housing, care and management and market linkage. The number of youth linked with this activity and the progress achieved are given here:

### Enterprise 1: Pig farming

- No. of youth trained: 163
- No. of groups formed: 4
- No. of youth established their own units: 10
- No. of youth running the units in a sustainably: 10
- Average size of the unit: 16
- Cost of production per unit per unit: Rs. 75000-80000
- Sale value of the produce in the market: Rs. 3500/Piglet
- Net economic gains (Rs./unit/year): Rs.220000 –Rs. 235000
- Employment generation: 85 youth employed round the year





Goat population is about 13 lakh in Gumla district; where almost every household owns goats, ranging from 5 to 25 numbers. The tribal farmers never gave much attention to it as an enterprise. Keeping the technological facilities and economic viability, promotion of goatry as an enterprise has been promoted under ARYA project with an objective to upscale the improved breed through intervention support of improved breed of buck, proper shelter, health management and market linkages. The activities carried out are briefly outlined here:

### Enterprise 2: Goat farming

- No. of youth trained: 85
- No. of groups formed: 7
- No. of youth established their own units: 35
- No. of youth running the units sustainably: 15
- Average size of the unit: 15
- Cost of production per unit: Rs. 18000-20000
- Sale value of the produce: Rs. 400/Kg (Meat)
- Net economic gains (Rs./unit/year): Rs. 84000-90000
- Employment generation: 110 youth employed for 182 days in a year



Gumla is among the top lac producing districts of the country. Lac cultivation is an age-old practice in the district. Kusum, Palas, Ber, and Pakar are the diverse host plants that are available in abundance. Despite being a major allied activity of entire district, lac yield (kg) being recovered / tree is not up to mark i, e 2-3 kg/ tree only. Keeping the potential of its cultivation and income generation, lac cultivation is taken up as an enterprise under ARYA project. The main objective was to promote lac as an enterprise and to enhance yield (upto 5-6 kg/tree) and income to rural youth.

### Enterprise 3: Lac cultivation

- No. of youth trained : 109
- No. of groups formed:1
- No. of youth established their own units: 20
- No. of youth running the units sustainably: 20
- Average size of the unit: 20 ber plant
- Cost of production per unit per unit: Rs. 14500
- Sale value of the produce : Rs. 300/Kg (Brood Lac) & Rs. 250/Kg (Lac)
- Net economic gains (Rs./unit/year): Rs. 42480- Rs. 45000
- Employment generation: 185 youth round the year



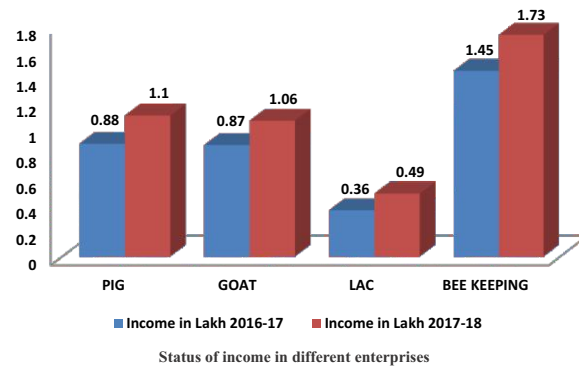
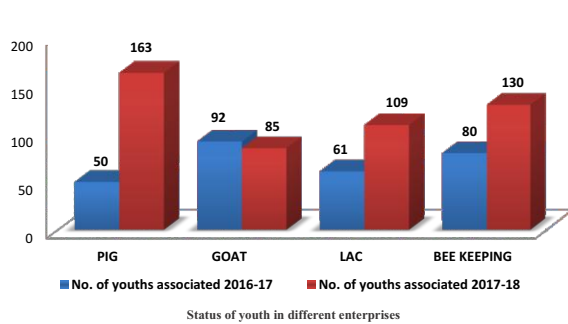




Beekeeping is being practiced by the farmers of Gumla district from very beginning but not on a commercial scale. There is potential for its scaling up as the district is having high range of plant/crop cycle. The major constraint is lack of technical knowledge, migration and market. Keeping the feasibilities and economical viabilities, beekeeping has been promoted as an enterprise.

Enterprise 4: Bee keeping

- No. of youth trained: 130
- No. of group formed: 6
- No. of youth established their own units: 20
- No. of youth running the units sustainably: 14
- Average size of each unit: 12 hives
- Cost of production per unit: Rs. 36000
- Sale value of the produce: Rs. 185/Kg
- Net economic gains (Rs./unit/year): Rs. 66600
- Employment generation: 20 youth employed for 185 days in a year







### KVK-NIMPITH

South 24 Parganas District has abundant natural resources of minerals and suitable agro-climatic conditions for agriculture, horticulture, fisheries and animal husbandry. The district is one of the major producers of rice, potato, fish and dairy products. Fishery, animal husbandry and climate smart horticulture play pivotal role for augmenting additional income as well as attracting rural youth within the village with sustainable and lucrative income through ARYA project.

KVK Nimpith implemented the ARYA project by promoting fishery unit including carp hatchery and Asian catfish hatchery, betel vine cultivation in climate smart hi-tech shade net boroz and meat processing unit comprising poultry and pekin duck farming.

The youth were oriented in establishing small poultry units having 100 birds per unit. It was planned to do poultry farming for 2 months for each cycle. Similarly, KVKs selected rural youth having preliminary knowledge on poultry farming, oriented, them for establishing pekin duck farming units with 300 birds per unit. Rural youth with an aptitude for fish breeding and having brood fish were trained and supported to establish 2 re-circulatory carp hatchery units. KVK was involved in catfish and indigenous fish hatchery and making arrangement for sending the hatchery and other accessories to beneficiaries. Also, capacity building was organized for rural youth on fish breeding.

#### Enterprise 1: Betel vine cultivation

- No. of youth trained: 50
- No. of youth established their own units: 48
- No. of youth running the units sustainably: 10
- Average size of the unit (e.g. betel vine cultivation in climate smart boroz): 500 sqm.
- Cost of production per unit: One-time establishment cost Rs. 2.35 lakh per unit. Recurring cost Rs. 45000 per unit per year.
- Sale value of the produce: Rs./thousand leaves: Rs. 2100
- Net economic gains (Rs./unit/year): Rs. 1.25 lakh
- Employment generation : 128 youth employed round the year





### Enterprise 2: Backyard poultry

- No. of youth trained: 102
- No. of youth established their own units: 23
- No. of youth running the units sustainably: 23
- Average size of the unit: 200
- Cost of production per unit: 0.41 lakh/cycle
- Sale value of the produce: Rs. 180/kg
- Net economic gains (Rs./unit/year): Rs. 1.56 lakh
- Employment generation: 102 youth employed for 300 days in a year



### Enterprise 3: Pekin duck farming

- No. of youth trained: 55
- No. of youth established their own units: 46
- No. of youth running units sustainably: 25
- Average size of the unit: 200
- Cost of production per unit: Rs. 0.60 Lakh /cycle
- Sale value of the produce: Rs. 240/kg
- Net economic gains (Rs./unit/year): Rs. 2.83 lakh
- Employment generation: 55 youth employed for 300 days in a year



### Enterprise 4: Carp hatchery

- No. of youth trained: 60
- No. of groups formed: 3
- No. of groups running units sustainably: 12
- Average size of the unit: 1400000 spawn/unit/cycle (3 days)
- Cost of production per unit: Rs.1500/cycle (3 days)
- Sale value of the produce: Rs.400/Bati (approximately 70000 spawn)
- Net economic gains (Rs./unit/year): Rs. 1.12 lakh
- Employment generation: 60 youth employed for 150 days in a year





**Enterprise 5: Catfish hatchery**

- No. of youth trained: 32
- No. of groups formed: 4
- No. of youth established their own units: 5
- No. of youth running the units sustainably: 4
- Average size of the unit: 25000 fry/unit/cycle (20 days)
- Cost of production per unit: Rs.10000/cycle (20 days)
- Sale value of the produce: Rs.3/fry
- Net economic gains (Rs./unit/year): Rs. 1.45 lakh
- Employment generation: 32 youth employed for 150 days in a year







### KVK-NAYAGARH

Agriculture is the main stay of Nayagarh district and providing livelihood support to a large section of rural population. Rice and pulses are the major crops grown in the district. Besides, there is vast scope for promotion of allied sectors such as dairy, poultry, pisciculture and mushroom cultivation. The youth in the district constitute 33% of the rural population. In the district, the total fish production is around 8090 MT with a pond area of 2171 ha with average productivity of 2.3 t/ha. Mushroom cultivation is also considered as alternate livelihood option in Nayagarh district as the climatic condition is favourable.

In the Nayagarh district, more than 6 qtl of mushroom is being produced every day but lack of proper processing and packaging has been the major bottleneck affecting the market price and shelf life of the produce. About 71560 ha is occupied by different pulse crops in rabi season but there is lack of processing, grading and packaging facilities. Even with a promising scope to have better earning from agriculture, during the recent past, a trend has been observed wherein the rural youth particularly resource poor are moving away from agriculture.

#### Enterprise 1: Backyard poultry

- No. of youth trained: 75
- No. of youth established their own units: 75
- No. of youth running the units sustainably: 15
- Average size of the unit: 100-300 birds
- Cost of production per unit: Rs. 18000 to Rs. 20000
- Sale value of the produce: Rs. 150/Kg
- Net economic gains (Rs./unit/year): Rs. 75345
- Employment generation: 15 youth employed round the year





During the recent years, certain activities and enterprises have proved to be potential in earning livelihood for the resource poor groups which can be promoted as agro based enterprises on a commercial basis. Broiler farming has emerged as one such alternative option for livelihood security and improving the socio-economic status. In the district the total fish production is around 6900 MT with a pond area of 2171 ha with average productivity of 2.3 t/ha. There is also a great scope for increasing the fish production and per capita income by promoting young entrepreneurs for production of fish seed and fingerling.

In this scenario, KVK Nayagarh initiated ARYA project to attract the rural youths, oriented them for enterprises namely mushroom production, stunted fingerling production and backyard poultry rearing so that rural youth can adopt resource specific need-based alternative remunerative occupation at a sustainable level.

### Enterprise 2: Mushroom production

- No. of youth trained: 75
- No. of youth established their own units: 75
- No. of youth running the units sustainably: 50
- Cost of production per unit: Rs. 6000/100 beds
- Sale value of the produce: Rs. 160/Kg
- Net economic gains (Rs./unit/year):Rs. 19200/100 beds
- Employment generation: 100 youth employed round the year



Under ARYA project, a total of 85 rural youth are running the entrepreneurial units in a sustainable manner with 44 numbers of beneficiaries. A substantial increase in the average annual income of the rural youth occurs after adopting ARYA programme. For mushroom production average annual income increased from Rs.170000 to Rs.420000 for 500 beds per year. For stunted fingerlings production the average annual income increases from Rs.81000 to Rs.312500 for 1 ha pond and for backyard poultry farming the same is from Rs.202000 to Rs.243000 per unit having 200 birds. The substantial increase in annual income encourages 38 youth of the districts to adopt the enterprises. Besides, KVK Nayagarh organized 8 training programmes, by which 160 rural youth are trained in the above mentioned identified enterprises.

### Enterprise 3: Fingerling production

- No. of youth trained: 50
- No. of youth established their own units: 50
- No. of youth running the units sustainably: 20
- Cost of production per unit: Rs. 70000/ acre pond
- Sale value of the produce: Rs. 400/Kg
- Net economic gains (Rs./unit/year): Rs.34000
- Employment generation: 50 youth employed round the year







### **A S S A M** KVK-KARBI ANGLONG

Karbi Anglong is one of the two hill districts of Assam having the largest geographical areas of 10434 sq km which comprises of 2633 villages. The total cultivable area of the district being 214705 hectares constitutes 20.57% of the total geographical area. The district is inhabited by various ethnic tribal groups. Of the total 297001 workers, 215716 (72.63%) is engaged in agriculture and its related activities. However, the cropping intensity of the district remains low at 136% while the state average cropping intensity is 156%. This offers ample scope for intensification of agriculture, creating employment opportunity to youth constituting 20% of the population in the age group of 18 to 35 years.

Agriculture is the main source of income in Karbi Anglong. Roughly 30% of the total area of the district falls either in the plains or valleys. Hence suitable steps to attract the youth towards agriculture is a viable option for earning a livelihood. Therefore, select agriculture and animal husbandry enterprises with potential of earning high income in the field of agriculture to provide year round employment opportunity to innovative entrepreneur youth in agriculture with increased income opportunities and minimize migration. In this context, under the ARYA project, various interventions like dual purpose poultry production, pig and piglet production, mushroom production, and commercialization of pineapple have been taken-up by orienting youth groups.

#### **Enterprise 1: Dual purpose poultry production**

- No. of youth trained: 105
- No. of groups formed: 7
- No. of youth running the units sustainably: 10
- Average size of the unit: 100 chicks/ unit
- Cost of production per unit: Rs. 39800
- Sale value: Rs. 200/Kg (Fresh meat) & Rs. 7/egg
- Net economic gains (Rs./unit/year): Rs. 54366
- Employment generation: 10 youth employed round the year





### Enterprise 2: Pig and piglet production

- No. of youth trained: 73
- No. of groups formed: 5
- No. of youth established their own units: 10
- No. of youth running the units sustainably: 10
- Average size of the unit: 7
- Cost of production per unit: Rs. 426000
- Sale value: Rs. 12000/ pig and Rs. 3000/ piglet
- Net economic gains (Rs/unit/year): Rs. 132000
- Employment generation: 14 youth for 5 days and 10 youth round the year



### Enterprise 3: Mushroom production

- No. of youth trained: 86
- No. of groups formed: 10
- No. of youth established their own units: 50
- No. of youth running the units sustainably: 35
- Average size of the unit: 500 beds
- Cost of production per unit: Rs. 57625
- Sale value of the produce: Rs. 100/ Kg
- Net economic gains (Rs/unit/year): Rs. 14594
- Employment generation: 50 youth employed round the year



### Enterprise 4: Commercialization of pineapple

- No. of youth trained: 83
- No. of groups formed: 9
- No. of youth established their own units: 16
- No. of youth running the units sustainably: 16
- Average size of the unit: 1333 sq. metre
- Cost of production per unit: Rs. 60064
- Sale value of the produce: Rs. 50/ pair of fruits
- Net economic gains (Rs./unit/year): Rs. 90000
- Employment generated : 16 youth employed for 68 days in a year





## S I K K I M KVK-NORTH SIKKIM

Major crops grown in North Sikkim district are rice, wheat, maize and finger millet. Major horticultural crops in the district are large cardamom, off-season vegetables, potato and ginger. Animal rearing also plays an important role in the economic and social life of the people in the region. The district is prone to drought, hail storm, cold waves and frost. Since the climate of North Sikkim is a limiting factor for outdoor vegetable production and construction of a green house is a constraint due to high expense and availability of land, there was a need for a low cost technology for protected vegetable cultivation which was easy to build and cost very little.

Piggery, sheep, goatry and off season vegetables are having higher potentials in the district. Along with the traditional knowledge and skill the youth of the district with higher level of literacy and access to information on technological advancement in the field of agriculture can take-up profitable enterprises. Therefore, select enterprises with potential of earning high income in the field of agriculture and also provide employment opportunities to youth are promoted. In this context, under the ARYA project, various interventions like walk-in tunnel, pig production and mushroom production enterprises have been taken up by orienting youth with regard to various technical knowledge and skills; providing critical inputs, linking them with various stakeholders across the value chain; linking with market.

### Enterprise 1: Walk-in tunnel

- No. of youth trained: 110
- No. of groups formed: 41
- No. of youth established their own units: 41
- No. of youth running the units sustainably: 41
- Average size of the unit: 22 x 9 x 8 feet/unit tunnel, 7 units per enterprise.
- Cost of production per unit: Rs.24500 (For 7 units per enterprise)
- Sale value: Tomato: Rs. 50/kg, Capsicum: Rs. 120/kg, leafy vegetables *i.e* spinach, coriander, fenugreek leaves, amaranth: Rs. 25/bundle
- Net economic gains (Rs./unit/year): Rs.84000
- Employment generation: 41 youth employed round the year





**Enterprise 2: Pig production unit**

- No. of youth trained: 54
- No. of groups formed: 7
- No. of youth established their own units: 22
- No. of youth running the units sustainably: 22
- Average size of the unit: 10
- Cost of production per unit: Rs.34000
- Sale value of the produce: Male piglet: Rs.4000/piglet, Female: Rs.3500/piglet
- Net economic gains (Rs/unit/year): Rs.85000
- Employment generation: 22 youth employed round the year



**Enterprise 3: Mushroom production unit**

- No. of youth trained: 60
- No. of groups formed: 6
- No. of youth running the units sustainably: 10
- Average size of the unit: 500 beds
- Sale value of the produce: Rs.150/kg
- Net economic gains (Rs/unit/year): Rs. 16000
- Employment generation: 10 youth employed round the year





### KVK-SENAPATI

Senapati district is one of the hill districts of Manipur mostly inhabited by tribals. Livestock continues to hold an important place in the diet of the people and also as a major source of income. Pork and poultry meat are most preferred among the tribal people. Almost all the households in the district raise poultry birds and pigs in their homestead. The district has a pig population of 137775 and a poultry population of 423716. The fish production in the district stands at 478 tonnes annually from both pond culture and paddy cum fish culture. The district has a conducive agro-climatic condition for cultivation of large cardamom as evidenced from some growers who have recently introduced and taken up large cardamom cultivation successfully on the hill slope and can be a suitable alternative to shifting cultivation. Mushroom production, a secondary agriculture, in the district has a new vista as a substitute for meat and also an income generating vocation.

Various enterprises have been identified as per demand and market potential. With the intervention of KVK under ARYA project i.e. mushroom production, poultry farming, pig production (fattening), pig breeding, fish farming and large cardamom cultivation, capacity building through skill training, technical guidance in routine operation, suitable market linkage to producers and consumers helped in providing income opportunities for rural youth in the district.

#### Enterprise 1: Mushroom production

- No. of youth trained: 40
- No. of groups formed: 5
- No. of youth established their own units: 10
- No. of youth running the unit sustainably: 3
- Average size of the unit: 220 bags
- Cost of production per unit: Rs. 40000
- Sale value of the produce: Rs. 120 per Kg
- Net economic gain (per unit /year): Rs. 197600 from 6 harvests
- Employment generation: 10 youth employed 90 days in a year





### Enterprise 2: Poultry farming

- No. of youth trained: 50
- No. of groups formed: 12
- No. of youth established their own units: 12
- No. of youth running the unit sustainably: 7
- Average size of the unit: 200
- Cost of production per unit: Rs. 125750 (for 2 production cycles)
- Sale value of the produce: Rs. 200/kg of meat
- Net economic gain (per unit /year): Rs.102250
- Employment generation: 12 youth employed round the year



### Enterprise 3: Pig production (Fattening)

- No. of youth trained: 24
- No. of groups formed: 5
- No. of youth established their own units: 15
- No. of youth running the unit sustainably: 9
- Average size of the unit: 10 pigs
- Cost of production per unit: Rs. 115000
- Sale value of the produce: Rs. 230 per Kg.
- Net economic gain (per unit /year): Rs.161000
- Employment generation: 15 youth employed round the year



### Enterprise 4: Pig breeding

- No. of youth trained: 6
- Nos. of groups formed: 1
- No. of youth established their own units: 6
- Nos. of youth running the unit sustainably: 6
- Average size of the unit: 12 pigs
- Cost of production per unit: Rs. 144000
- Sale value: Rs. 4500 per piglet
- Net economic gain (per unit /year): Rs.756000
- Employment generation: 6 youth employed round the year





### Enterprise 5: Fish farming

- No. of youth trained: 30
- No. of groups formed: 10
- No. of youth established their own units: 30
- No. of youth running the unit sustainably: 30
- Average size of the unit: 2000 fingerlings
- Cost of production per unit: Rs. 73600
- Sale value of the produce: Rs. 200 per Kg
- Net economic gain (per unit/year): Rs. 178400
- Employment generation: 30 youth employed round the year



### Enterprise 6: Large cardamom cultivation

- No. of youth trained: 50
- No. of groups formed: 10
- No. of youth established their own units: 50
- Nos. of youth running the unit sustainably: 35
- Average size of the unit: 2 ha per unit
- Cost of production per unit: Rs. 71000
- Sale value of the produce: Yet to be harvested
- Employment generation: 35 youth employed round the year









### **NAGALAND** KVK-WOKHA

The Wokha district of Nagaland is the place of plenty where livestock rearing mainly pig and poultry play an imperative role for the overall economic condition of the rural people. The district is having a pig population of 93432 producing 3100 MT pork and 3500 piglets against the requirement of 4233 MT pork and 9700 piglets annually. Poultry population with 422190 produce around 200 lakh eggs against the requirement of 298 lakh annually. Mushroom cultivation is an emerging enterprise in the district on account of congenial agro-climatic conditions and the availability of an assured market. Cut-flower production of gerbera/lilium under protected cultivation is an untapped entrepreneurial activity in the district. The Jhum system of cultivation in the district is not at all remunerative which leads to distraction and migration of rural youth to urban areas for better livelihood. About 40% of total population (166000) is in the age group of 20-35 years and the total unemployed youth is 8451 in the district.

To attract youth in agri-based enterprise, the most potential and prospective enterprises are established in the rural area of the Wokha district under the ARYA project. Introduction of quality germplasm of pig (Hampshire & large black crossbreed) and poultry (Vanaraja/Srinidhi), capacity building through skill training, technical guidance in routine operation, suitable market linkage to producers and consumers helped creating entrepreneurship opportunities to the rural youth in the district.

#### **Enterprise 1: Poultry farming**

- No. of youth trained: 40
- No. of groups formed: 10
- No. of youth established their own entrepreneurial units: 23
- No. of youth running the units sustainably: 18
- Average size of each unit: 400 birds
- Cost of production per unit: Rs. 135000
- Sale value: Live weight: Rs. 320/ kg, Egg: Rs. 4 /egg
- Net economic gains (Rs./unit/year): Rs. 85300
- Employment generation: 23 youth employed for 240 days in a year





### Enterprise 2: Pig farming

- No. of youth trained: 40
- No. of groups formed: 12
- No. of youth established their own units: 24
- No. of youth running the units sustainably: 15
- Average size of each unit: 400 sq feet
- Cost of production per unit: Rs. 140000
- Sale value: Piglets: Rs. 3500, Boar service: Rs. 1500
- Net economic gains (Rs./unit/year): Rs. 70000
- Employment generation: 24 youth employed round the year



### Enterprise 3: Mushroom production

- No. of youth trained: 40
- No. of groups formed: 12
- No. of youth established their own units: 23
- No. of youth running the units sustainably: 23
- Average size of each unit: 500 Sq feet
- Cost of production per unit: Rs. 46250
- Sale value of the produce: Rs. 200/kg
- Net economic gains (Rs./unit/year): Rs. 83750
- Employment generation: 23 youth employed for 210 days in a year



### Enterprise 4: Cut flower production

- No. of youth trained: 30
- No. of groups formed: 2
- No. of youth established their own units: 10
- No. of youth running the units sustainably: 2
- Average size of each unit: Capacity-800 flower plants/unit
- Cost of production per unit: Rs.142000
- Sale value of the produce: Rs. 40 per flower stalk
- Net economic gains (Rs./unit/year): Rs.48000
- Employment generation: 10 youth employed for 210 days in a year





### KVK-LUNGLEI

Lunglei District in Mizoram lies in the South Central part of the state with an area of 4538sq kms. The population is 158317, with a density of 30/sq km. An increase in migration of the youth has been observed to be increasing on yearly basis. The prospects of agriculture are getting affected because of the youth shunning farming and migrating to cities in search jobs. The only way of attracting them to agriculture is to turn farming into a profitable venture in rural areas. The proposed project aims at not only making farming a profitable venture and increasing farmers' income.

Lunglei district is having a pig population of 31968 producing 1005 tonnes pork annually. Poultry population of 169752 birds produce around 200 lakh eggs annually. Mushroom cultivation is an emerging enterprise in the district on account of congenial agro-climatic conditions and the availability of an assured market. Bee keeping has started to increase their income. The different activities of the ARYA project have been selected as per demand and market potential. With the intervention of KVK under ARYA project, quality germplasm of pig (Hampshire & large white Yorkshire) and poultry (rainbow rooster/boiler poultry), capacity building through skill training, technical guidance in routine operation, suitable market linkage to producers and consumers helped rural youth for getting employment in agriculture.

#### Enterprise 1: Poultry farming

- No. of youth trained: 75
- No. of groups formed: 15
- No. of youth established their own units: 15
- No. of youth running the units sustainably: 15
- Average size of each unit = 250 birds (Hatchery unit) & 500 birds (Production unit)
- Cost of production: Hatchery unit = Rs.42500/year, Rearing unit =Rs. 273000/year
- Sale value: Hatchery unit = Rs.567000, Rearing unit = Rs. 1006800
- Net economic gains (Rs./unit/year): Hatchery unit= Rs. 524500, Rearing unit=Rs. 733800
- Employment generation: 15 youth employed round the year





### Enterprise 2: Pig farming

- No. of youth trained : 70
- No. of groups formed: 14
- No. of youth established their own units: 15
- No. of youth running the units sustainably: 15
- Average size of each entrepreneurial unit: 1 unit = 20 pigs (Breeding unit), 2 unit = 15 pigs (Rearing unit)
- Cost of production per unit: Breeding unit (Piglets) = Rs. 405000, Rearing unit (Fattening)=Rs.300000
- Sale value of the produce: Breeding unit (Piglets) = Rs.1080000, Rearing unit (Fattening)=Rs.450000
- Net economic gains (Rs./unit/year): Breeding unit (Piglets) = Rs. 675000, Rearing unit (Fattening)=Rs. 75000
- Employment generation: 15 youth employed round the year



### Enterprise 3: Mushroom production

- No. of youth trained: 30
- No. of groups formed: 2
- No. of youth established their own units: 5
- No. of youth running the units sustainably: 5
- Average size of each unit: 180 bags
- Cost of production per unit: Rs. 20000
- Sale value of the produce: Rs. 243000
- Net economic gains (Rs./unit/year): Rs.223000
- Employment generation: 5 youth employed for 60 days in a year





**Enterprise 4: Bee keeping**

- No. of youth trained: 25
- No. of groups formed: 5
- No. of youth established their own units: 10
- No. of youth running the units sustainably: 10
- Average size of each unit: 30 boxes
- Cost of production per unit: Rs. 186000
- Sale value of the produce: Rs. 384000
- Net economic gains (Rs./unit/year): Rs.99000
- Employment generation: 10 youth employed for 70 days in a year







## M A H A R A S H T R A KVK-NAGPUR

As per 2011 population census of India, the population of Nagpur district is 46.53 lakh and about 68.31 % of the total population is residing in rural area and 51.76 % of the rural people are self-employed in agriculture and non-agriculture activities. There is a need to create opportunities for generating income and employment and prevent youth migration to cities.

Major area of Nagpur district is under perennial horticultural fruit crop i.e. Orange and mono crop production system of cotton, soybean, rice and red-gram in rainy season and wheat, chickpea in rabi season. Horticulture, which has gained commercial importance in the recent years, is having significant share in the economy of the country. The total area under citrus in India is 10.55 lakh ha with productivity of 12.08 t/ha. In Maharashtra, it is dominated with 32.5 % in area and 18.9 % in total production, however the productivity is very low (5.05 t/ha) as compared to the national average of 8.81 t/ha. Oranges are mainly grown in Vidarbha region of the State and the production and productivity is quite low due to non availability of good quality seedlings. Hence, KVK-Nagpur promoted establishment of nursery enterprise among rural youth for production of fruit planting material and to provide employment opportunities under ARYA project.

### Enterprises 1: Production of disease free planting material of citrus & pomegranate

- No. of youth trained: 39
- No. of groups formed: 10
- No. of youth associated with each group: 10
- No. of youth established their own entrepreneur units: 15
- No. of youth who are running the entrepreneurial units in sustainably: 15
- Average size of each unit: 6000 (Sweet orange)
- Cost of production per unit: Rs. 9 per sapling i.e., Rs. 54000 per nursery
- Sale value: Rs. 30 per sapling
- Net economic gains (Rs./unit/year): Rs. 180000
- Employment generation: 22 youth employed round the year





At present, there are 11 APMCs spread over 13 blocks in the district. Besides there are 12 sales and purchase co-operative societies in the district for handling the agriculture inputs and produce. There is tremendous potential for export of agro-food products, horticulture, floriculture; International Cargo-hub in development at Nagpur will boost the exports of these products. Also, to make use of abundant availability of fruits in the districts and engage rural youth in income generation activities across the value chain, the KVK promoted fruits processing enterprise units.

According to the data published by National Horticulture Board of India, there is a decrease in the area of pomegranate cultivation in India from 1.09 lakh ha in 2008-09 to 1.07 lakh ha in 2010-11; similarly, the production has also decreased from 8.07 lakh ton to 7.43 lakh tons during the same period. So there are great challenges to increase area under this fruit crop in non-traditional area as the climatic situation which is prevailing in Nagpur district is quite suitable to grow this crop. Recently the farmers of this area have already taken up in light soil with irrigation facility but they are facing serious problems to get good quality sapling material. Jain Irrigation Private limited, Jalgaon (Maharashtra) has started providing tissue culture sapling of this crop but the sustainability of this sapling is questionable as the farmers have informed to the scientist in various forum. So there is urgent need to provide good quality sapling to the farmers of Nagpur and adjoining districts also

Only 2% of horticultural produce is processed. This wastage can be easily prevented by adopting various methods of post harvest management. At the same time, there is market glut during harvesting season and farmers are forced to sell their produce at throw away prices. Therefore, food processing industries can help rural youth to get sure income for their produce and also avoid market glut.

### Enterprise 2: Fruit and vegetable processing unit

- No. of youth trained: 86
- No. of groups formed: 8
- No. of youth established their own units: 2
- No. of youth running the units sustainably: 2
- Average size of each unit: 10000 lit. juice/unit
- Cost of production per unit: Rs. 5.00 lakh
- Sale value: Rs. 70/lit.
- Net economic gains (Rs/unit/year): Rs. 2.00 lakh





### **G**UJARAT **KVK-RAJKOT**

Rajkot district has a population of 3804558 out of which about to 65 % is youth. Most of the people are engaged in farming and animal husbandry. The major crops grown in the district are groundnut, cotton, wheat, garlic, onion and cumin. Farmers are earning from selling agricultural produces and raw milk directly to local market. This region has mostly rainfed area where the water scarcity is main issue. Lower price of agricultural commodities is the second most serious issue. The youth of this village and surrounding area are migrating to Rajkot city for employment. Looking to the situation, KVK, Rajkot has taken up value addition and milk processing enterprises.

Following various enterprises have been set up at village level in Rajkot district under ARYA project.

- An enterprise of mini oil mill unit has established with the objective of processing and value addition of groundnut, selling of pure & nutritional edible oil to the society and to generate employment & income from agriculture.
- Milk-*Mava* making unit has been established for income generation by milk processing through milk-*mava* machine and to produce high quality of Milk-*mava* and milk based edible products like Penda (sweet) for consumers which enables extra income from animal husbandry.
- The Rajkot district has spice crop grown potential area for cumin, coriander, chilly and turmeric crop. An enterprise of Pulverizer Machine (Masala Mill) unit has established with the objectives of processing and value addition of spices crop, selling of pure spices to the society and to generate employment & income.
- The Rajkot district has pulse crop grown potential area for specially the chickpea crop. An enterprise of Namkeen (*Farsan*) making unit has established with the objectives of value addition, selling of pure Namkeen to the society and to generate employment & income.



Oil production unit



Activities like 6 project awareness programmes, 17 trainings and capacity building programmes, 5 visits to successful enterprises to motivating youth for entrepreneurship; empowering youth in rural areas by processing, value addition and marketing of agricultural produces and functional linkage with different institutions were commenced under ARYA project.

### Enterprise 1: Mini Oil Mill Unit

- No. of youth trained: 123
- No. of groups formed: 2
- No. of youth established their own units: 30
- No. of youth running the units sustainably: 30
- Average size of the unit: Mini oil mill plant: 3000 kg groundnut per day
- Cost of production per unit: 44 kg Pure oil + 69 kg cake production cost per hour: Rs. 5708
- Sale value: 44 kg Pure groundnut oil + 69 kg groundnut cake sale value: Rs. 6233  
Pure groundnut oil: Rs. 115/kg, Groundnut cake: Rs. 17/kg
- Net economic gains (Rs./unit/year): Rs. 84,000 per youth per year.
- Employment generation: 30 youth employed for 230 days in a year.



### Enterprise 2: Milk-Mava making unit

- No. of youth trained: 58
- No. of groups formed: 3
- No. of youth established their own units: 8
- No. of youth are running units sustainably: 8
- Average size of each unit: Milk-Mava Machine: Khova/ Mava capacity: 10 lt, Khova/ Mava white: 5 lt, Milk boiling capacity: 25 lt, Vessel Volume: 55 lt, Hand Sealer Machine: Size: 12 inch
- Cost of production per unit: Milk-Mava: Rs. 193/kg, Sweet: Rs 151/kg
- Sale value: Milk-Mava: Rs. 290/kg, Sweet: Rs. 250/kg
- Net economic gains (Rs./unit/year): Rs. 50625 per youth per year
- Employment generation: 8 youth employed for 300 days in a year.





### Enterprise 3: Spices processing

- No. of youth trained: 38
- No. of groups formed: 2
- No. of groups established their own units: 2
- No. of youths running the units sustainably: 7
- Average size of each unit: Pulverizer Machine (Masala Mill): Capacity 50 to 100 kg per hour, Hand Sealer Machine: Size: 12 inch
- Cost of production per unit: Chilly powder: Rs. 110/kg, Chilly powder: Rs.160/kg, Cumin-coriander: Rs. 200 /kg
- Net economic gains (Rs./unit/year): Rs. 51000 per youth per year
- Employment generation: 7 youth employed for 165 days in a year.



### Enterprise 4: Namkeen production unit

- No. of youth trained: 15
- No. of groups formed: 2
- No. of groups established their own units: 2
- No. of youth running the units sustainably: 5
- Average size of each entrepreneurial unit: Namkeen (Farsan) making machine: Size: 9 inch, Hand Sealer Machine: Size: 12 inch
- Cost of production per unit: Gathiya, Sev and Fafada: Rs. 120 to 140/ kg
- Sale value: Gathiya, Sev and Fafada: Rs. 170 to 200/kg
- Net economic gains (Rs./unit/year): Rs. 78,000 per youth per year.
- Employment generation: 5 youth employed for 300 days in a year.







### KVK-DANTEWADA

Major crops of the Dantewada district are rice, minor millets, kulthi, urd, moong, maize and niger in kharif season. ARYA project aims at improving the livelihood of tribal youth through capacity building and skill development in selected enterprises. The major population depends on agriculture and subsidiary occupation. The entrepreneurial activities i.e. mushroom, poultry (Kadaknath), lac cultivation, processing and value addition of ntfps and processing and value addition of minor millets were taken up by the KVK.

Under ARYA project, the KVK demonstrated oyster mushroom cultivation. This has created lot of interest among the rural youth. Rural youth in the district are motivated and involved in spawn production, mushroom cultivation, marketing and mushroom processing. There is increasing demand for mushroom among consumers and therefore, the enterprise is generating employment opportunities among rural youth.

Abundant availability of natural host plants and favourable climatic conditions in the district are the main reason for encouraging Lac farming as enterprise under the ARYA project. Lac cultivation enterprise is serving as secondary sources of income for rural youth.

#### Enterprise 1: Mushroom Production

- No. of youth trained: 40
- No. of groups formed: 4
- No. of youth established their own units: 40
- No. of youths/groups running the units sustainably: 10
- Average size of each unit: 10X15 sq.ft.
- Cost of production per unit: Rs. 22313
- Sale value of the produce: Rs 200/Kg
- Net economic gains (Rs./unit/year): Rs. 49000
- Employment generation: 40 youth employed for 117 days in a year





Backyard poultry is a very common practice in rural households for income generation but rearing of traditional breed, poor housing and very poor hygiene are the major bottlenecks in further expansion of the technology. Broiler farming has emerged as one such alternative option for livelihood security and improving the socio-economic status. KVK under ARYA project could substantially promote backyard poultry (Kadaknath) enterprise and could provide sustainable income for rural youth.

Finger millet (Ragi) is the second most important crop of the district. Majority of farmers cultivate finger millet but they are not getting reasonable price for their produce. There is enormous potential of preparing different value added food products based on ragi that can enrich the nutritional value and wellbeing of tribal dominating people in the society. Krishi Vigyan Kendra, Dantewada has already developed and demonstrated the technology for preparation of laddu, ragi Malt and other delicious value added products of Ragi.

**Enterprise 2: Processing and value addition of lac**

- No. of youth trained: 60
- No. of groups formed: 4
- No. of youth established their own units: 60
- No. of youth running the units sustainably: 60
- Average size of each unit: 40 tree/ unit
- Cost of production per unit: Rs. 110750
- Sale value: Rs. 320/Kg
- Net economic gains (Rs./unit/year): Rs. 192500
- Employment generation: 60 youth employed for 83 days in a year



**Enterprise 3: Backyard poultry (Kadaknath)**

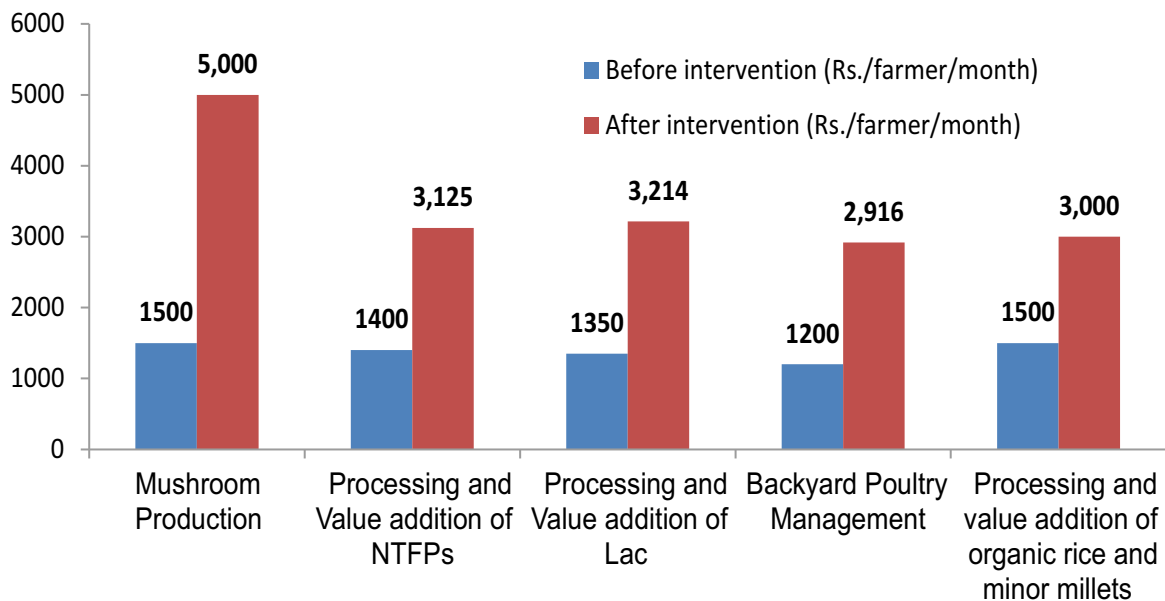
- No. of youth trained: 50
- No. of groups formed: 5
- No. of youth established their own units: 50
- No. of youth running the units sustainably: 50
- Average size of each unit: 500 birds
- Cost of production per unit: Rs. 162500
- Sale value: Rs. 700/bird
- Economic gains (Rs./unit/year): Rs. 350000
- Employment generation: 50 youth employed for 243 days in a year





**Enterprise 4: Processing value addition of organic rice and minor millets**

- No. of youth trained: 3386
- No. of groups formed: 260
- No. of youth established their own units: 3386
- No. of youth running units sustainably: 3386
- Average size of each unit: 200 sq.ft
- Cost of production per unit: Rs. 35,000 (establishment cost of the unit)
- Sale value: Rs. 8,000/qtl (Rice) and Rs.12,000/qtl (ragi malt)
- Economic gains (Rs./unit/year): Rs. 144000
- Employment generation: 3386 youth employed for 340 days in a year.



Impact of ARYA enterprises on income







## MADHYA PRADESH KVK-GWALIOR

The main crops of Gwalior district are wheat, paddy, pearl millet, sorghum, pulses oilseed and vegetables crops. KVK Gwalior selected 17 villages in cluster form. KVK Gwalior has selected 200 rural youth in these villages under 4 types of entrepreneurship i. e. vermicomposting, nursery management, mushroom production and poultry production.

Backyard poultry farming is an important enterprise for providing income and employment for rural youth. It is recognized that there is greater potential for mushroom cultivation as an enterprise as there is increasing consumers' preferences in nearby cities towards mushroom. The KVK promoted mushroom cultivation through demonstrations, capacity building and by providing critical inputs under the project. As a result, rural youth are motivated and engaged in spawn production, mushroom cultivation, marketing and mushroom processing.

Rural youth have been trained under the project for developing commercial nursery enterprise and they were motivated to establish nurseries for vegetables, fruits and flowers. Realizing the growing market potential for producing vermicompost from agricultural wastes, technical backstopping was provided in establishment of vermicompost units. The KVK has also helped the rural youth groups including sourcing the inputs and marketing their products.

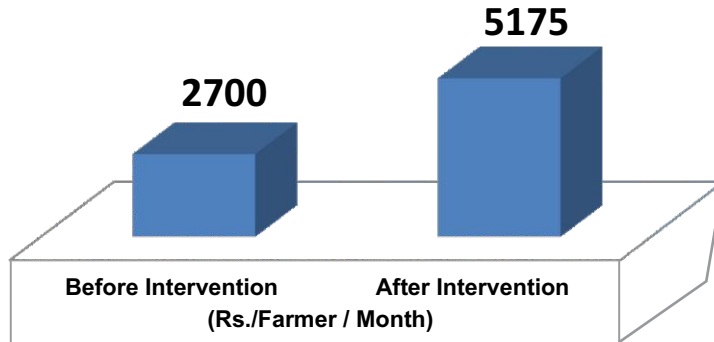
### Enterprise 1: Kadaknath poultry production

- No. of youth trained: 50
- No. of groups formed: 8
- No. of youth established their own units: 12
- No. of youth running the units sustainably: 11
- Average size of each unit: 300 birds
- Cost of production per unit: Rs. 90900
- Sale value: Rs. 500/bird, Rs10/ Egg.
- Net economic gains (Rs./unit/year): Rs. 132300
- Employment generation: 11 youth employed in 170 days in a year



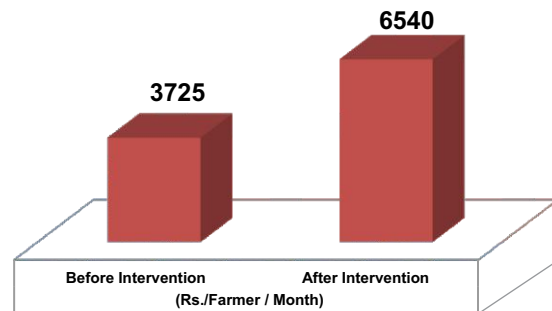


Economic Impact of kadaknath poultry production



Enterprise 2: Mushroom production.

- No. of youth oriented trained: 40
- No. of groups formed: 6
- No. of youth established their own unit: 12
- No. of youth running the units sustainably: 4
- Average size of each unit: Mushroom hut size 20X25 ft<sup>2</sup>(Seasonal), 1800 ft<sup>2</sup> (Mushroom spawn production and processing)
- Cost of production per unit: Rs. 21000 (seasonal production) Rs. 140000 (Commercial spawn and Mushroom processing)
- Sale value: Fresh mushroom Rs. 100/Kg, Dry mushroom Rs. 450/Kg, Mushroom Pickle: Rs. 300/kg Spawn: Rs. 90/kg
- Net economic gains (Rs./unit/year): Rs. 90000/unit/year (Net return commercial spawn and mushroom processing). Rs. 3000/month (seasonal mushroom production).
- Employment generation: 12 youth employed round the year



Economic impact of mushroom production



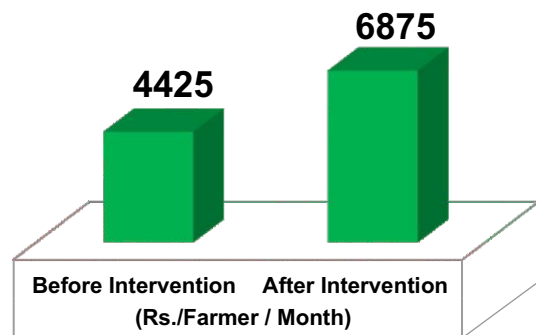
### Enterprise 3: Vermicompost Unit

- No. of youth trained: 60
- No. of groups formed: 3
- No. of youth established their own units: 19
- No. of youths running the unit sustainably: 19
- Average size of each unit: 4 pit method (12X12 feet).
- Cost of production per unit: Rs 5000
- Sale value: Rs 5/Kg.
- Net economic gains (Rs./unit/year): Rs. 28000
- Employment generation: 19 youth employed 93 days in a year



### Enterprise 4: Nursery management

- No. of youth trained: 50
- No. of groups formed: 4
- No. of youth established their own entrepreneurial units: 6
- No. of youth running the units sustainably: 6
- Average size of each unit: 10X15 M net house
- Cost of production per unit: 162000
- Sale value: Rs. 24/plant
- Net economic gains (Rs./unit/year): Rs. 238000
- Employment generation: 30 youth employed 120 days in a year



Economic impact of nursery management





## **KVK-NELLORE**

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The Nellore district has 37% youth population out of total population of about 27 lakh. The major vegetable crops of Nellore district are chilli, brinjal and cole crops in 3850 ha with 7700 MTs production. Nellore district has good potential for mushroom cultivation due to favourable agro climatic conditions, abundance of paddy straw and growing market opportunities in neighbouring cities. With increasing demand for organically produced fruits and vegetables from consumers, there is growing market potential for vermicompost produced from agricultural wastes. Also, there is increased demand for good quality seedlings of fruits and vegetables.

Under the ARYA project, KVK-Nellore has trained 80 rural youth for the establishment of shade net nurseries for vegetables and fruits, 153 rural youth for the establishment of mushroom enterprise and 120 rural youth on the vermicompost production skills. Technical backstopping was extended in establishment of shade net nurseries, mushroom production units and vermicompost units. The KVK has also helped the rural youth groups in value chain management including sourcing the inputs and marketing their products.

### **Enterprise 1: Vermicompost unit**

- No. of youth trained: 120
- No. of groups formed: 16
- No. of youth established their own units: 48
- No. of youth running the entrepreneurial units in a sustainable manner: 48
- Average size of each entrepreneurial unit (Shade net unit): 11.25 Cu mts
- Cost of production per unit: Rs. 3/kg
- Sale value: Rs. 6 to 7 per kg
- Net economic gains (Rs./unit/year): Rs. 54000
- Employment generation: 48 youth employed for 120 days in a year





### Enterprise 2: Mushroom production

- No. of youth trained: 148
- No. of groups formed: 15
- No. of youth established their own units: 45
- No. of youth running the units sustainably: 45
- Average size of each unit (Shade net unit) : 150 sq.ft
- Cost of production per unit: Rs. 60 /kg of mushrooms (Milky or oyster)
- Sale value: Rs. 220 per kg
- Net economic gains (Rs./unit/year): Rs. 120000 (20 cycles per year) and each cycle estimated to produce 40 kgs of mushrooms
- Employment generation: 45 youth employed for 120 days in a year.



### Enterprise 3: Vegetable/ fruit nursery

- No. of youth trained: 50
- No. of groups formed: 13
- No. of youth established their own units: 39
- No. of youth running the units sustainably: 39
- Average size of each unit: 200 m<sup>2</sup>
- Cost of production per unit:  
Production cost for vegetable seedlings: Rs.50 paise, Acid lime: Rs.10, Sweet orange: Rs. 20, Papaya: Rs. 5, Mari gold: Rs.1.50
- Sale value of the produce in the market (Vegetable and Fruits seedlings):
  - i. Vegetable seedlings: Rs.1
  - ii. Acid lime: Rs.25
  - iii. Sweet orange: Rs.50
  - iv. Papaya: Rs.12
  - v. Mari gold: Rs.2.50
- Net economic gains (Rs./unit/year): Rs. 240000
- Employment generation: 39 youth employed for 140 days in year.





## TELANGANA KVK-NALGONDA

Small and marginal farmers of Nalgonda district are in dire need of stable farm income. Combination of multiple enterprises by utilizing available natural resources can help farmers to earn enough to meet their family needs. This will prevent migration of people to urban areas. Thus, there is a need to encourage rural youth for taking-up remunerative enterprises.

Realizing the importance of commercial nursery raising of vegetables, fruits and flowers, a group of 30 rural youth have been trained under the ARYA project. Youth were trained on vermicompost production technology and 25 vermicompost units were established through the project. Awareness was created among rural youth on the advantages of integrated farming system and 33 IFS units were established under the project.

### Enterprise 1: Nursery raising under shadenet houses

- No. of youth trained: 60
- No. of groups formed: 5
- No. of youth established their own units: 2
- No. of youth running the units sustainably: 2
- Average size of each unit: One shade net unit area 225 m<sup>2</sup>
- Cost of production per unit: vegetable seedlings : Rs.50/100 seedlings
- Sale value:
  - Tomato 535000 seedlings at Rs. 0.70/seedling, Brinjal 213000 seedlings at Rs. 0.70/seedling, Chilli 400000 seedlings at Rs. 0.80/seedling, Marigold 191000 seedlings at Rs. 2.3/seedling, Sweet Orange 20000 plants at Rs. 90/plant, Cabbage and Cauliflower 2500 seedlings at Rs. 1/seedling
- Net economic gains (Rs./unit/year): Rs.310400
- Employment generation: 60 youth employed for 180 days in a year





**Enterprise 2: Vermicompost**

- No. of youth trained: 60
- No. of youth established their own units: 3
- No. of youth running the units sustainably: 3
- Average size of each unit: 15'x20' ft.
- Net economic gains (Rs./unit/year): Rs.18000
- Employment generation: 3 youth employed for 95 days in a year



**Enterprise 3: Integrated farming system**

- No. of youth trained: 60
- No. of youth established their own units: 5
- No. of youths running the units sustainably: 5
- Average size of each unit: Sheep (2), Poultry birds (60 Rajasri breed), Fish fingerlings (1000)
- Cost of production per unit: Rs. 47000/unit
- Net economic gains (Rs./unit/year): Sheep: Rs. 7000/sheep, Rajasri breed chicks: 3500 (Present average weight of each chick-1.25 kg) at Rs. 120/kg
- Employment generation: 5 youth employed for round the year



Poultry unit as part of IFS



Sheep unit as part of IFS



Hatchery unit as part of IFS





**Enterprise 4: Entrepreneurship development through bakery products**

- No. of youth trained: 33
- No. of groups formed: 3
- No. of youth running the units sustainably: 3
- Cost of production per unit: Millets (Sorgum, Ragi, Bajra, Korra) based Biscuits - 5028 kg at Rs.200/kg, Cakes – 300 kg at Rs.250/kg, Other Products – 245 kg at Rs.200/kg
- Sale value: Rs.200-250/kg
- Net economic gains (Rs./unit/year): Rs. 376534







### KVK-KANYAKUMARI

Banana is one of the major crops in the district being cultivated in an area of 9100 ha with an annual production of 294750 tonnes and the average productivity of 32.39 t/ha. Though banana is a perishable fruit owing to high moisture, value addition through appropriate processing technique provides a good business opportunity not only using the edible part but also the bi-products like pseudo stem, fibre and inflorescence. Under the ARYA project, 100 rural youth were trained on banana fibre extraction and handicraft making, banana dehydration and banana flour, value added products from banana flour and pseudostem and novel bakery products.

Coconut is the major plantation crop cultivated in Kanyakumari district in an area of 23600 ha with an annual production of 2367 lakh nuts and the average productivity of 10030 nuts/ha. Youth were trained on desiccated coconut, tender coconut snowball making, trimmed coconut, coconut jelly, confectionary products and novel bakery products.

#### Enterprise 1: Extraction of Banana Fibre

- No. of youth trained: 15
- No. of groups formed: 1
- Cost of production per unit: Yet to start the production
- Sale value: Rs. 300/Kg

#### Enterprise 2: Banana dehydration and flour making

- No. of youth trained/skilled in the enterprise:13
- No. of groups formed: 1
- Cost of production per unit: Yet to start the production
- Sale value:Rs.165/Kg



Banana fibre handicraft making



**Enterprise 3: Value added products from banana flower and pseudostem**

- No. of youth trained: 12
- No. of groups formed: 1
- Cost of production per unit: Yet to start the production
- Sale value: Rs.350/litre

**Enterprise 4: Processing of desiccated coconut**

- No. of youth trained: 13
- No. of groups formed: 1
- Cost of production per unit: Yet to start the production
- Sale value: Rs. 115

**Enterprise 5: Processing of coconut jelly and confectionary products**

- No. of youth trained: 15
- No. of groups formed: 1
- Cost of production per unit: Yet to start the production
- Sale value: Rs.250/Kg

**Enterprise 6: Tender coconut snow ball and trimmed tender coconut**

- No. of youth trained:15
- No. of groups formed: 1
- Cost of production per unit: Yet to start the production
- Sale value: Rs.40/nut

**Enterprise 7: Novel bakery products from coconut**

- No. of youth trained:15
- No. of groups formed: 1
- Cost of production per unit: Yet to start the production
- Sale value: Rs. 300/kg



**K** **KVK-KANNUR**

**E**

Kannur is often known as "The crown of Kerala" because of its natural treasures is edged by the Western Ghats in the east, Kozhikode and Wayanad districts in the south, Lakshadweep Sea in the west and Kasaragod in the north. The backbone of Kannur is its agriculture, fisheries and other related industries, upon which a majority of its population depend on for their livelihood. Paddy is the principal crop grown in this area along with coconut, pepper, cashew, tapioca areca nut and rubber. Due to the production of wide range of fruits across the Kannur district, there is a much scope to undertake the value-added activities which in turn create employment opportunities. Accordingly, enterprises related to coconut, jackfruit and vegetable processing were identified and youths were oriented to take up different enterprise activities. Quality planting materials are in great demand, particularly for pepper and hence the youth are motivated to take up nursery raising as an enterprise.

**R** **Enterprise 1: Coconut processing and value addition**

- No. of youth trained: 10
- No. of groups formed: 1

**L** **Enterprise 2: Vegetable and fruit processing and value addition**

- No. of youth trained: 25
- No. of groups formed: 1



Orientation on coconut processing



**Enterprise 3: Jack fruit processing and value addition**

- No. of youth trained:10
- No. of groups formed: 1

**Enterprise 4: Quality planting material production/ technology providers**

- No. of youth trained: 15
- No. of groups formed: 2 individual units established.



Orientation on vegetable and fruit processing



Black pepper nursery unit



### KVK-BENGALURU RURAL

**K** Bengaluru Rural district has 0.61 lakh hectare area under millets with a production of 0.99 tonnes with productivity of 1634 kg/ha. Under ARYA project, the KVK- Bengaluru Rural has created awareness among farm youth about importance of millet cultivation and also expanded area under these crops in the district. With the support of the project, the registered Commodity Based Association (CBA) has been formed in the district for promotion of millets.

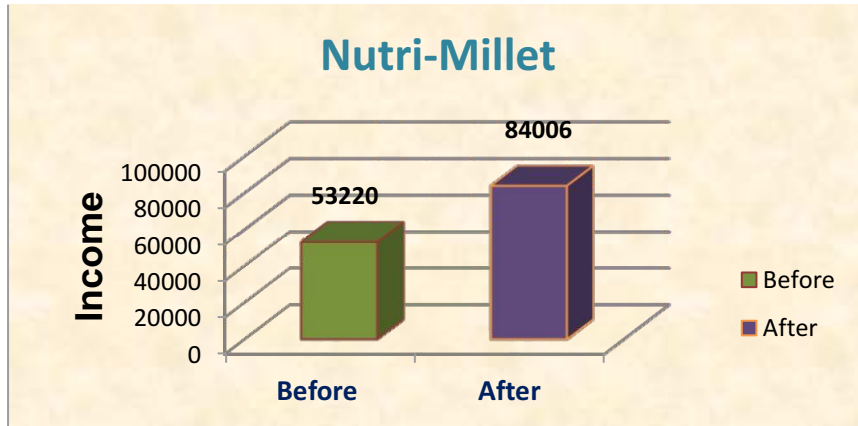
**A** Under the ARYA project, Annapurneshwari Nutri-millet Growers and Processors Association® has been formed in 2016 at Perumagondanahalli, Doddaballapur Taluk, Bengaluru Rural District with 35 members. A total of 21 capacity building programmes have been organized on production technologies, processing, preparation of value added products, branding including FSSAI licence and market linkages.

**R** The KVK has also emphasised on value addition of jack fruit. The Jack fruit is cultivated in an area of 944 ha with a production of 0.21 lakh tones and it has got good potential for value addition into several products like squash, jam, candy, halwa and ready to serve beverages. With the support of ARYA project, the KVK has supported formation of CBA in the district for promotion of jackfruit and its value added products and provided technical backstopping.

#### Enterprise 1: Nutri-millet processing

- No. of youth trained: 35
- No. of groups formed: 1
- No. of youth established their own units: 35
- No. of youth running the units sustainably: 20
- Cost of production per unit: Rs. 682248
- Sale value: Rs. 250 /Kg
- Net economic gains (Rs./unit/year): Rs.21.2 lakh
- Employment generation: 35 youth employed for 250 days in a year





Impact of nutri-millet enterprises on youth income

**Enterprise 2: Jack fruit processing and value addition**

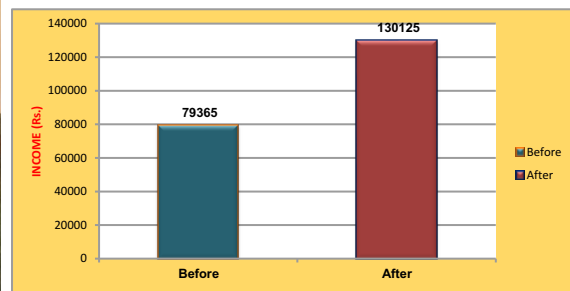
- No. of youth trained: 35
- No. of groups formed: 1
- No. of youth established their own units: 35
- No. of youth are running the units sustainably: 35
- Cost of production per unit: Rs. 447119
- Sale value: Rs. 300 /Kg
- Net economic gains (Rs./unit/year): Rs.20.3 lakh
- Employment generation: 35 youth employed for 160 days in a year



Preparation of jack fruit papad



Jack Chips Preparation



Impact of jack fruit processing unit on income of rural youth





## ARYA-Attracting and Retaining Youth in Agriculture



### Contributing Institutes : Directors and Nodal Officers (ARYA)

1	ICAR-Agricultural Technology Application Research Institute-Ludhiana (Zone-1)
2	ICAR-Agricultural Technology Application Research Institute-Jodhpur (Zone-2)
3	ICAR-Agricultural Technology Application Research Institute-Kanpur (Zone-3)
4	ICAR-Agricultural Technology Application Research Institute-Patna (Zone-4)
5	ICAR-Agricultural Technology Application Research Institute-Kolkatta (Zone-5)
6	ICAR-Agricultural Technology Application Research Institute-Guwahati (Zone-6)
7	ICAR-Agricultural Technology Application Research Institute-Umiam (Zone-7)
8	ICAR-Agricultural Technology Application Research Institute- Pune (Zone-8)
9	ICAR-Agricultural Technology Application Research Institute-Jabalpur (Zone-9)
10	ICAR-Agricultural Technology Application Research Institute-Hyderabad (Zone-10)
11	ICAR-Agricultural Technology Application Research Institute-Bengaluru (Zone- 11)

### Contributing KVKs : Heads and SMSs concerned

1	KVK- Batinda
2	KVK- Hamirpur
3	KVK- Haridwar
4	KVK- Kathua
5	KVK- Gurugram
6	KVK- Banaswara
7	KVK- Muzaffaranagar
8	KVK- East Champaran
9	KVK- Gumla
10	KVK- Nimpith
11	KVK- Nayagarh
12	KVK- Karbi Anglong
13	KVK- North Sikkim
14	KVK- Senapti
15	KVK- Wokha
16	KVK- Lunglei
17	KVK- Nagpur
18	KVK- Rajkot
19	KVK- Dantewada
20	KVK- Gwalior
21	KVK- Nellore
22	KVK- Nalgonda
23	KVK- Kanyakumari
24	KVK- Bengaluru Rural
25	KVK- Kannur



**Agricultural Extension Division  
Indian Council of Agricultural Research  
New Delhi**