

Youth Empowerment under Attracting and Retaining Youth in Agriculture (ARYA)



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Zone-VII, Umiam, Meghalaya-793103
(An ISO 9001:2015 Certified Organization)

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Preface

Greetings from Team ICAR-ATARI, Umiam!

The ICAR-Agricultural Technology Application Research Institute (ATARI), with its headquarters at Umiam, Meghalaya, is one of the eleven zones in India under Transfer of Technology Project of ICAR comprising five North Eastern States, i.e. Manipur, Meghalaya, Nagaland, Mizoram and Tripura. It is primarily mandated for coordination and monitoring of technology application and frontline extension education programmes and strengthening agricultural extension research and knowledge management. The institute is also responsible for the implementation of transfer of technology (TOT), systematic coordination, monitoring and reviewing of mandated activities of KVKs such as technology assessment, refinement, demonstrations, training programs and other extension activities etc. in the five states of the region.

The prospects of agriculture in India are getting affected because of the youth shunning farming and migrating to cities in search of menial and non-farming jobs. To sustain food security, it is imperative to encourage farmers to continue with agriculture, wherein the rural youth have a crucial role to play. The only way of attracting them to agriculture is to turn farming into a profitable venture in rural areas. Realizing the importance of rural youth in agricultural development especially in terms of food security of the country, ICAR has initiated a programme on **“Attracting and Retaining Youth in Agriculture (ARYA)”** in 25 KVK districts in the country in 2015-16 with budget provision of Rs. 100 crores. The project has been under implementation in 3 KVKs viz; Wokha (Nagaland), Lunglei (Mizoram) and Senapati (Manipur) under ICAR-ATARI, Umiam for providing benefits to the rural youth of the concerned districts with a view to attracting and empowering them to take up various agriculture and allied service sector enterprises and thereby checking migration of educated youth from rural areas to the cities in search of jobs.

With the implementation of Project ARYA in three KVKs, the youth in the zone have started taking up agriculture and allied activities as a major occupation for getting additional income through generation of self-employment. This project has been widely accepted by the youth of this region and in the coming years, there is a great potential to attract more number of youth in agriculture and its allied sectors. In

addition to already functional 3 KVKs, ARYA Project is also being implemented in three more KVKs namely; Jaintia Hills (Meghalaya), Tuensang (Nagaland) and Dhalai (Tripura) with the administrative and financial approval by the competent authority of ICAR, New Delhi during 2018-19 to support more rural youth in the zone. This particular document on the project will certainly help the concerned stakeholders of the region for technical guidance in policy formulation and implementation of such developmental programmes meant for rural youth in hilly states of the region. I sincerely acknowledge the services rendered by Dr. A.K. Singha, Principal Scientist and his entire team for their sincere efforts for bringing out this document in a short period of time.

Place: Umiam, Meghalaya

Date:



(A. K.Tripathi)

Director i/c

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PART-1

Background and Guidelines

1.1. Introduction

Youth, in the age category of 15-35 years (National Youth Policy), plays vital role in meaningfully transforming agriculture in India. However, the prospects of agriculture in India are getting affected because of the youth shunning farming and migrating to cities in search of menial and non-farming jobs. Retaining youth in agriculture and making agriculture more profitable are thus, big challenges. The only way to create interest and confidence among rural youth in agriculture is to make agriculture more profitable and sustainable. The rapid growth and diversification of development activities have resulted in much needed expansion of employment opportunities, but at the same time have triggered rural to urban migration. The difference in basic amenities, communication, health and education facilities between villages and urban areas also attracts the youth towards cities. This trend has inadvertently resulted in shift of farm labours to non-farm sectors. To sustain food security, it is imperative to encourage farmers to continue with agriculture, wherein the rural youth have a crucial role to play. Currently, there is a challenge of retaining youngsters in agriculture due to various socio-economic and cultural factors, including profitability in agricultural pursuits. On the other hand, small and marginal land holdings are on the rise which poses challenge to food security for increasing population. It has become imminent to reorient agricultural practices to make them intellectually satisfying and economically rewarding for the youth. Thus, it was felt to bring a comprehensive model for the development of rural youth in general and agricultural youth in particular. Therefore, realizing the importance of rural youth in agricultural development especially from the point of view of food security of the country, ICAR has initiated a programme on “Attracting and Retaining Youth in Agriculture (ARYA)”. The proposed programmed aims at not only making farming a more profitable venture, but also increasing the farmers’ incomes by many folds.

1.2. Rationale

The present traditional agricultural cultivation practices of hill districts of the region are generating quite low profit for the rural youth. The current agriculture

practices are drudgery prone. Again, non-availability of inputs is another problem in profit making enterprises. The tribal youth therefore, are looking forward to alternatives to enhance their incomes and employment generation. The hill districts have excellent climate to take up high-value agriculture and are resource rich: plenty of land is available as land is community owned under the tribal system. The farmers have adopted organic mode of cultivation for time immemorial. Due to reduced shifting cultivation cycle to less than five years, the soil nutrient level has come down. There is huge demand for agricultural and allied products including pork, fish, beef, chicken etc. in the district. The climate offers excellent scope for high-value floriculture, mushroom production, orchid culture and horticulture (kiwifruit, broccoli). Therefore the project is envisaged to search an intervention to retain the rural youth in agriculture. This innovative project will attract and retain rural youth in agriculture, in a bid to tap the youth potential in farming and also prevent their migration to urban areas. In the hill tribal districts of the states of Manipur, Nagaland and Mizoram, the migration has become rampant because the rain-dependent slope-land crop and terrace paddy cultivation (much of the farm operations are still done by hand) cannot meet the family food and expenditure needs anymore.

1.3. Objectives of ARYA Project

- i. To attract and empower the Youth in Rural Areas to take up various Agriculture, allied and service sector enterprises for sustainable income and gainful employment in selected districts.
- ii. To enable the Farm Youth to establish network groups to take up resource and capital intensive activities like processing, value addition and marketing.
- iii. To demonstrate functional linkage with different institutions and stakeholders for convergence of opportunities available under various schemes/program for sustainable development of youth.

1.4. Methodology

- A bench mark survey along with SWOT analysis was conducted prior to the initiation of the project by the implementing KVKs of Senapati, Lunglei and Wokha under Zone-VII for ascertaining various resources, their status and utilization pattern by the farmers in the respective districts.
- PRA tools were also used to identify potential tribal farm youth for different project components followed by group discussion.

- The project was taken up at various pre-selected (criteria based) points at the respective districts.
- Training needs analysis was conducted for the identified potential youth in carrying out different activities under the selected enterprises/ components successfully.

The project under the Zone consisted of major components such as-

- i. Mushroom spawn production and mushroom cultivation/ production
 - ii. Piggery and Pig breeding to produce quality piglets
 - iii. Poultry and Hatchery for birds to produce quality poultry, turkey, goose and duck chicks
 - iv. Fishery and Hatchery for quality fish fingerlings production
 - v. Large cardamom cultivation
 - vi. Mushroom and spawn production
 - vii. Bee keeping
 - viii. Floriculture-cut flowers
- Each component was entrusted to the selected potential tribal youth for implementation as per agreement signed between the implementing agency (KVK) and the selected tribal youth. Thus a total of 200 tribal farm youth from each KVK were selected as the beneficiaries in the entire project implementation period of two years in the field.
 - The selected tribal youth were imparted institutional trainings to update their knowledge and skills on various aspects of production and management activities including post-harvest technologies and marketing under various project components.
 - The project also focused on providing linkages to the beneficiaries with banks to get loans for setting up processing units and custom-hiring services related to farm machinery etc.

1.5. Selection Criteria of KVKs

- It should be in project mode through competitive process
- Concept note to be submitted by respective Heads of KVKs
- Priority for backwardness of the region, disadvantaged districts
- Consortium approach

- Budget should be commensurate with the type of training and required support for the entrepreneur
- At least one district per state should be covered.

1.6. Identification of Youth

Each KVK involved about 200 youth having less than 35 years of age. The selection of youth was made on the basis of gender and social status. The implementing KVK shall evaluate the capability of each youth to select a particular suitable agricultural venture for him/ her. The District Committee constituted at KVK level for implementation of the ARYA project will also provide overall guidance in selection of the potential youth with entrepreneurial skill and aptitude.

Besides developing entrepreneurial capabilities, the youth shall be trained on the essential skills as per the requirement of selected enterprises and entrepreneurial units shall be established at their location within the availability of fund. The entrepreneurial activities may be in terms of Apiary, Mushroom, seed Processing, Soil Testing, Poultry, Dairy, Goatery, Carp-Hatchery, Vermi-compost etc.

The purpose is to establish economic models for youth in the villages so that youth get attracted in agriculture and overall rural situation is improved. Skill development of rural youth will help in improving their confidence levels and encourage them to pursue farming as profession, generate additional employment opportunities to absorb under-employed and unemployed rural youth in secondary agriculture and service related activities in rural areas. The trained youth groups will function as role model for other youth and will demonstrate the potentiality of the agri-based enterprises and also give training to other farmers.

1.7. Project Governance and Administration

Deputy Director General (Agril Extn), ICAR, New Delhi shall be the overall administrator of the project at ICAR Headquarter level and shall have overall supervision and guidance on the ARYA Project. The project will be implemented by Agricultural Extension Division, ICAR New Delhi. Assistant Director General (Agril. Extension)/Principal Scientist (Agril. Extension) from the Agricultural Extension Division, ICAR Headquarters will be the Nodal Officer for implementation of the project. Director, ICAR-ATARI will be facilitating the identified KVKs in the concerned Zone for implementation of the project.

The governance of the ARYA scheme shall be through various Committees constituted with the approval of the competent authority in the ICAR. There shall be an Apex Committee, a Steering Committee, Zonal Committees and District Committees for administration and effective implementation of the ARYA scheme. The various committees, their composition and the Terms of References of each Committee shall be as given below:

1.7.1. Apex Committee:

Secretary (DARE) & DG (ICAR)	Chairman
Additional Secretary (DARE) & Secretary (ICAR)	Member
Additional Secretary (DARE) & Financial Advisor, DARE/ICAR	Member
Deputy Director General (Agril Extn)	Member
Director (Finance), ICAR	Member
Nominee from Department of Agriculture & Cooperation (DAC)	Member
Nominee from Agriculture Skill Council of India (ASCI)	Member
Two Experts to be nominated by Secretary, DARE & DG, ICAR	Member
Director, Agricultural Technology Application Research Institute (ATARI) (One)	Member
ADG (IP&TM), ICAR	Member
ADG (Agril Extn)/ Principal Scientist (Agril Extn), ICAR	Member

Terms of Reference (ToR)

- i. To review the progress of the project and provide directions for implementation of the project.
- ii. The Committee will meet at least once in a year.

1.7.2. Steering Committee

Deputy Director General (Agril Extn)	Chairman
Directors, Agricultural Technology Application Research Institute (ATARI)	Member
ADG (IP & TM)	Member
Deputy Secretary, Agricultural Extension	Member
ADG (Agril Extn)/ Principal Scientist (Agril Extn)	Member

Terms of Reference (ToR)

- i. To provide overall guidance and monitoring of physical and financial progress of the implementation of the project and reporting on the implementation to apex Committee.
- ii. The Committee will meet at least twice in a year.

1.7.3. Zonal Committee (ZC)

Senior Expert having acquaintance and knowledge of the area to be nominated by Secretary, DARE & DG, ICAR	Chairman
Director, Agricultural Technology Application Research Institute (ATARI)	Co-Chairman
Director of Extension Education from Agricultural University (One from each state)	Member
One Expert from nearby ICAR Institute to be nominated by DDG (Agril Extn)	Member
Additional Director of Agriculture/ Horticulture/ Animal Husbandry from State Department of Agriculture	Member
Administrative Officer from ATARI	Member
AAO/AFAO from ATARI	Member
Principal Scientist, Agricultural Technology Application Research Institute (ATARI)	Member

Terms of Reference (ToR)

- i. To approve work plans, guide and monitor the operation of ARYA Project(s) in KVKs in the concerned Zone.
- ii. The Committee will meet at least twice in a year.

1.7.4. District Committee

Director of Extension Education from Agricultural University	Chairman
Representative from line Department	Member
One Expert from nearby ICAR Institute to be nominated by DDG (Agril Extn)	Member
Principal Scientist, Agricultural Technology Application Research Institute (ATARI)	Member
FAO/AFAO from Krishi Vigyan Kendra	Member
Senior Scientist-cum-head, Krishi Vigyan Kendra	Member

Terms of Reference (ToR)

- i. Allocate and provide the funds for different activities as approved.
- ii. Guide and coordinate with selected youth for operationalisation of work plan.
- iii. Monitor the ARYA project on regular basis.
- iv. Consider and take appropriate action in any other matter concerning the operation of ARYA project.
- v. The Committee will meet at least twice in a year

1.7.6. List of ARYA implementing KVKs under Zone-VII, Umiam

1. KVK Senapati, Manipur
2. KVK Lunglei, Mizoram
3. KVK Wokha, Nagaland

The target of ARYA project earlier was to cover a total of 25 districts. However, the Government of India has recently expanded it to a total of 100 districts from the financial year 2018-19. In this regard, from every Zone, fresh proposals were invited for implementing this project. Accordingly, 3 more KVKs under the zone were approved for implementing the project from 2018-19 onwards. These new KVKs are-

1. KVK Jaintia Hills, Meghalaya
2. KVK Tuensang, Nagaland
3. KVK Dhalai, Tripura

PART-2

Achievements

I. Old KVKs

2.1.i. Name of KVK:

Lunglei, Mizoram

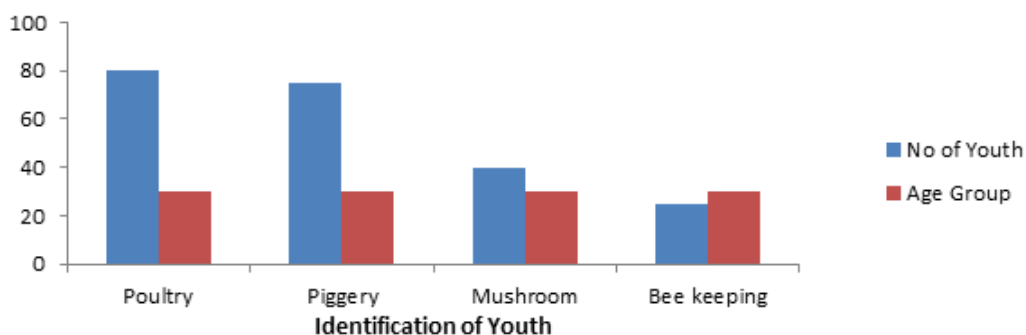
2.1.ii. Year of Establishment : 2016

2.1.iii. District Profile:

Geographical Area	: 4538 sq.km
Average Elevation	: 722m
Forest cover	: 3951 sq.km
Total No. of population	: 161428
Working population	: 78292
Non working population	: 83136
No. of Villages	: 195
No. of Villages covered under TSP	: 80
No. of Household	: 33058
Literacy rate	: 88.9%
No. of cultivators	: 45439
No. of agricultural & allied activities workers	: 10662
Percentage of Tribal population	: 95.1%
Migration Percentage	: 32.1



Identification of Youth (Age group and number of youth):



2.1.iv. Name of co-operating institutions for technical support:

Department/Organization	Components
Agriculture Department	Training (RADP)
Horticulture Department	Bee box
Animal Husbandry & Veterinary Department	Vaccines, Medicines, Animal Health Camp
CAU, Mizoram University, Pachhunga University College, KVK Mamit Mizoram, KVK Senapati Manipur.	Mushroom spawn , Training
Grace Foundation	Training Rural youth
NERLP	Training Rural Youth
OPEN DOORS (TATA TRUST)	Piggery housing

2.1.v. Enterprise Details

- **Discipline area:** Animal husbandry
- **Name of Enterprise:** Poultry farming
- **Objectives of the Enterprise:** Production and hatchery of birds to produce quality poultry
- **Detailed description:** A dual purpose breed Rainbow Rooster was introduced to the farmers. The hatchery unit produced these breeds in a sustainable manner and the chicks were supplied to the farmers.



- **Input/ Support Provide:** Trainings, Supply of Chicks, Supply of medicines, Renovation of poultry houses, Animal Health Camp, Maize cultivation for feed
- **Progress Made:** On progress

- **Name of Enterprise:** Piggery faming
- **Objectives of the Enterprise:** Pig breeding to produce quality piglets and pig production



- **Detailed description:** Introduction of Hampshire and Large white Yorkshire breed for higher production to meet the demand of pork and its products.
- **Input/ Support Provide:** Trainings, Supply of medicines, Renovation of piggery houses, Animal Health Camp, Maize cultivation for feed
- **Progress Made:** Production of quality breeds with superior germplasm

- **Name of Enterprise:** Mushroom production
- **Objectives of the Enterprise:** Continuous supply of mushroom spawn and mushroom production.

- **Detailed description:** Farmers in the state cultivated Oyster mushroom as there is good demand in the market.



- **Input/ Support Provide:** Trainings, Renovation of mushroom houses, supply of water harvesting equipments
- **Progress Made:** Spawn production on process

- **Name of Enterprise:** Bee keeping
- **Objectives of the Enterprise:** To increase employment opportunity in rural sector through quality honey production

- **Detailed description:** Most of the bee keepers kept honeybee to collect honey and increase the productivity of crops in the field. Besides which there are huge scope in honey bee enterprises.
- **Input/ Support Provide:** Trainings, supply of bee boxes
- **Progress Made:** Branding of honey- Fanai Bee & Pure Honey on process



2.1.vi. Capacity Development:

Thematic Area	Topic of Training	No. of Courses	No. of Beneficiaries		
			Male	Female	Total
Poultry	Poultry farming	13	85	60	145
Piggery	Piggery Management	13	98	47	145
Mushroom production	Mushroom production	13	50	80	130
Bee keeping	Scientific Bee keeping	13	95	35	130
	TOTAL	52	328	222	550

2.1.vii. Economic Profitability:

Name of Enterprise	Area (Acre)/ No.	Cost of Production (Rs per unit per year)	Gross Return (Rs. Per unit per year)	Net Income (Rs. per Unit per year)
Poultry	Hatchery unit: 80-100 Rearing unit: 450 birds/year	1.4 lakhs	Hatchery Unit- 240000 Rearing unit- 337500	Hatchery unit- 100000 Rearing unit- 197500

Piggery	Breeding unit- 10 sows Fattening unit- 10 -15 fattener pigs	2 lakhs	Breeding unit- 96000 Fattening unit- 360000	Breeding unit- 76000 Fattening unit- 160000
Mushroom production	150 blocks/cycle (x3cycle)	36000	202500	166500
Bee keeping	70-80 bee boxes/unit	1.4 lakhs	336000	196000

2.1.viii. Income level per Rural Youth:

Name of KVK	Name of enterprise	No. of Youth running the entrepreneurial units in a sustainable manner	Annual Income per youth before adopting ARYA project (in Rs.)	Annual Income per youth after adopting ARYA project (in Rs.)	Difference in average annual income per youth (in Rs.)
KVK- Lunglei	Poultry	50	Hatchery unit- 7000 Rearing unit-8700	Hatchery unit- 20000 Rearing unit- 39500	Hatchery unit- 13000 Rearing unit-30800
	Piggery	55	Breeding unit- 15000 Fattening unit-7000	Breeding unit -152000 Fattening unit- 32000	Breeding unit -137000 Fattening unit -25000
	Mushroom production	20	5000	33300	28300
	Bee keeping	15	8000	39200	31200

2.1.viii. Impact:

Employment generation through different enterprises in the villages and due to this youth migration rate is decreasing. Migration of youth declined. Doubling of farmers income at DFI villages.

2.2.i. Name of KVK: Senapati, Manipur**2.2.ii. Project Initiation: 2015-16**

2.2.iii. District Profile: ARYA Project is being implemented in 12 (twelve) villages of Senapati District. The villages under operation are located at altitudes ranging from 800m to 2800m from MSL with gentle to steep slopes. The soil of these villages varies from red loamy to clay loam with average 5.7pH. These villages receive an annual average rainfall of 1200mm with temperature ranging from 3°C in winter and to as high as 34°C in summer. The agro-climatic condition of these villages falls under two groups i, e. mid temperate and sub-tropical.

2.2.iv. Identification of Youth (Age group and number of youth): Age 18-27yrs= 81nos. and Age: 28-35 yrs= 119, Total youths=200

2.2.v. Name of co-operating institutions for technical support: ICAR, Imphal, CAU-Imphal and State line Departments

2.2.vi. Enterprise Details

- **Discipline area:** Secondary Agriculture
- **Name of Enterprise:** Mushroom production
- **Objectives of the Enterprise:** Production of quality fresh mushroom
- **Detailed description:** Avg. size : 220 fruiting bags capacity per unit with annual production capacity of 1760kgs of fresh mushroom, 20 no. of youth established their own units and the operational cost per unit = Rs. 40,000/-



- **Input/ Support Provide:** Spawn, low cost housing structure , training and others material input
- **Progress Made:** out of 40 total units 15nos.of unit /group are running the units in sustainable manner earning net average income of Rs. 10,3200 per person/ year.
- **Discipline area:** Livestock
- **Name of Enterprise:** Poultry
- **Objectives of the Enterprise:** Poultry rearing for meat purpose
- **Detailed description:** 48 nos. of youths established their own units with an average size of 200 birds per unit and the operational cost per unit = Rs. 125750/-
- **Input/ Support Provide:** feeds, chicks, shelter, training and vety.medicine
- **Progress Made:** out of 48.nos of youths 43 nos. of youths are running the units in a sustainable manner with an average income of Rs. 10,2250 per person per year from 2nos. of production cycle.



- **Discipline area:** Livestock
- **Name of Enterprise:** Piggery
- **Objectives of the Enterprise:** Rearing for meat purpose (fattening purpose)
- **Detailed description:** 6nos. of youths established their own units with an average size of 10 pigs per unit and cost of production per unit = Rs. 115000/-and one pig breeding unit with 1 no. of group with a ratio of 10 males and 2 females and the operational cost per unit = Rs. 144000/-
- **Input/ Support Provide:** feeds, Piglets, shelter, training and vety. medicine
- **Progress Made:** out of total 24.nos of youths 6 youths are running the units in a sustainable manner with a net average income of Rs. 61666 per person per year.



and 1 group is running the pig breeding unit in a sustainable manner with an annual production of 200 piglets, earning net average income of Rs. 126000 per person per year.

- **Discipline area:** Fishery
- **Name of Enterprise:** Fish production unit (Rohu, common carp etc)
- **Objectives of the Enterprise:** Rearing of fish for meat purpose
- **Detailed description:** 30 nos. of youths established their own units with an average size of 2000 fingerlings per unit and the operational cost per unit = Rs. 73600/-
- **Input/ Support Provide:** Feeds, fingerlings, training and construction of fish pond
- **Progress Made:** Out of total 30 nos of youths 10 youths are running the units in a sustainable manner with a net average income of Rs. 80466 per person per year.



- **Discipline area:** Plantation horticulture
- **Name of Enterprise:** Large Cardamom production
- **Objectives of the Enterprise:** Production of large cardamom (dry capsules)
- **Detailed description:** 50 nos. of youths established their own units with an average size of 2ha per unit and operational cost per unit = Rs. 71000/-



- **Input/ Support Provide:** Saplings of large cardamom, training and cost of manure
- **Progress Made:** out of 50.nos of youths 6 youths are running the units in a sustainable manner with a net average income of Rs. 72000 per person per year with expansion of area under cardamom cultivation.

2.2.vii. Capacity Development:

Thematic Area	Topic of Training	No. of Courses	No. of Beneficiaries		
			Male	Female	Total
Poultry production	Feed and disease management of poultry	1	16	14	30
Post Harvest	Post harvest management of mushroom	1	15	15	30
Mushroom production	Training on Mushroom cultivation	1	18	12	30
Poultry	Training on Poultry rearing	1	16	14	30
Post harvest	Post harvest management of large cardamom	1	13	17	30
Market and marketing	Marketing of agricultural produce with special reference to large cardamom	1	12	18	30
Fish production	Training of pond management	1	21	9	30

2.2.viii. Economic Profitability:

Name of Enterprise	Area (Acre)/ No./unit	Cost of Production (Rs per unit per year)	Gross Return (Rs. Per unit per year)	Net Income (Rs. per Unit per year)
Mushroom	20unit	40000	206400	103200
Poultry	48 unit	125750	102250	102250
Piggery(pig production)	24 unit	115000	185000	61666
pig breeding	1unit	144000	756000	126000
Fishery	30 unit	73600	241400	80466
Large Cardamom	50 unit	71000	36000	72000

2.2.ix. Income level per Rural Youth

Name of KVK	Name of enterprise	No. of Youth running the entrepreneurial units in a sustainable manner	Annual Income per youth before adopting ARYA project (in Rs.)	Annual Income per youth after adopting ARYA project (in Rs.)	Difference in average annual income per youth (in Rs.)
Senapati	Mushroom	15	56760	103200	46440
	Poultry	43	71575	102250	30675
	Piggery (pig production)	6	43167	61666	18499
	pig breeding	1	88200	126000	37800
	Fishery	10	56327	80466	24139
	Large Cardamom	6	50400	72000	21600

2.3.i. Name of KVK: KVK Wokha**2.3.ii. Project Initiation: 2016**

2.3.iii. District Profile : Wokha district is the home of the Lothas. *WO* in Lotha means *NUMBER of PEOPLE* and *KHA* means the *COUNTING*. So the place in which Lotha ancestors had gathered together and counted their numbers was named as Wokha. The Wokha district is situated in the mid western part of Nagaland State, adjacent to Golaghat and Jorhat districts of plain in State of Assam. It is bounded by Mokokchung district in the North, Kohima district in the South. Zunheboto district in the East and the State of the Assam in the West. The Wokha district is situated at latitude of 26° '8' North and a longitude of 94° '18' East. The altitude ranges from 304.3 Mtrs to 1313.67 Mtrs (MSL). The climate is warm in the lower plain areas, moderately warm in the upper region during summer but cold in winter. The monsoon starts from May and continues till October.

District profile at a glance

Geographical Area	1,628 sq. km
Agro-Climatic Zones	Sub Tropical Hill (35.7%). Sub Tropical Plain (23.6%). Mild Tropical Hill (40.6%).
Altitude	98 to 1503 msl
Population (2011)	1, 66,239
Population density	102 per sq. km
Average rainfall	1996 mm
Temperature	Max.: 32°C; Min.: 2°C
No of villages	133
No. of village covered under KVK activities	58 (43%)
No of farm families	17014
No of farm families covered under KVK activities	5104 (29%)
Major Agricultural Crop	Rice, Maize, Soybean, Mustard, Pea, Rajma, Sugarcane, Rice bean, <i>etc.</i>
Major Horticultural crop	Fruits- Banana, Orange, Passion fruits, Papaya, Peach, Plum, Jackfruits, Guava, <i>etc.</i> Vegetables- Colocasia, Cucumber, Tomato, Pumpkin, Beans, Brinjal, Chow-chow, <i>etc</i>
Important Livestock/Birds	Pig, Poultry, Goat
No of youth in the district	58100
No of unemployed youth in the district	10864
No of youth migrated from village to urban areas	2080
No of youth included under ARYA	370
No of villages under ARYA	20

2.3.iv. Identification of Youth (Age group and number of youth): A total of 200 no. of rural tribal youth of 18-35 years of age having education qualification of matric to graduate level was identified.

2.3.v. Name of co-operating institutions for technical support:

- i. ICAR Research Complex for NEH Region, Nagaland centre
- ii. District Veterinary Office, Wokha

- iii. District Agriculture Office, Wokha
- iv. District Horticulture Office, Wokha
- v. ATMA, Wokha.

2.3.vi. Enterprise Details

Discipline area: Animal Science

- **Name of Enterprise:** Piggery
- **Objectives of the Enterprise:**
 - i. To develop pig breeding unit for quality piglet production
 - ii. To help the rural youth in sustaining their livelihood and employment
 - iii. To developed a role model entrepreneur in pig farming for other unemployed youth.
- **Detailed description:** The selected rural unemployed educated youth who have qualify the criteria laid down under the ARYA project imparted 5 days skill training on scientific pig production and management. After completion of the training program, construction materials were provided to the youth for construction of piggery sty as per the requirement of floor space for pigs. Five nos. of Hampshire crossbred piglets of 2-3 months of age along with pig feed were also provided. Veterinary health care, deworming and vaccination were provided as and when needed.
- **Progress Made:** A total of 36 piggery units have established involving 55 rural unemployed educated youth. Out of the 55 rural youths, 42 no. of youths are running the entrepreneurial units in a sustainable manner earning an annual income of Rs. 80,000 to Rs. 1,50,000.



Input/ Support Provided:

Sl. No.	Input provided under ARYA project	Amount (Rs)
1	Construction materials for pig sty (5 chambers of 6 ft x 6 ft chamber each)	30,000
2	Hampshire crossbred piglets 5 nos. (4 female and 1 male)	27,500
3	Feeds (500kg)	14,500
4	Miscellaneous (Medicines, Vaccine, Mineral Mix et.)	5,000
	Total	77,000

- **Discipline area:** Animal Science
- **Name of Enterprise:** Poultry
- **Objectives of the Enterprise:**
 - 1) To establish poultry farm for production of chicken meat and egg
 - 2) To help the rural youth in sustaining their livelihood and employment
 - 3) To develop entrepreneurship in poultry production
- **Detailed description:** The selected rural unemployed educated youth who have qualify the criteria laid down under the ARYA project imparted 5 days skill training on scientific poultry production and management. After completion of the training program, construction materials were provided to the youth for construction of poultry house as per the requirement of floor space for birds. 500 nos. of vanaraja/srinidhi poultry birds along with poultry feed were also provided. Veterinary health care, deworming and vaccination were provided as and when needed.



- **Input/Support Provided:**

Sl. No.	Input provided under ARYA project	Amount (Rs)
1	Construction materials for low cost poultry housing (900 ft ² size)	25,000
2	Vanaraja/srinidhi chicks 500 nos.	15,000
3	Feeds (200kg)	5,800
4	Miscellaneous (Medicines, Vaccine, Mineral Mix et.)	5,000
	Total	50,800

- **Progress Made:** A total of 26 poultry units have established involving 54 rural unemployed educated youth. Out of the 54 rural youths, 33 nos. of youths are running the entrepreneurial units in a sustainable manner earning an annual income of Rs. 70,000 to Rs. 1, 20,000.

Discipline area: Secondary agriculture

- **Name of Enterprise:** Mushroom

- **Objectives of the Enterprise:**

1. To establish mushroom unit for production of mushroom
2. To help the rural youth in sustaining their livelihood and employment
3. To develop entrepreneurship in mushroom and spawn production

- **Detailed description:** The selected rural unemployed educated youth who have qualify the criteria laid down under the ARYA project imparted 5 days skill training on scientific mushroom production and management. After completion of the training program, construction materials were provided to the youth for construction of mushroom house as per the requirement of floor space. 500-600 nos of mushroom spawn (Oyster mushroom) along with plastic bags and other materials were also provided.



- **Input/ Support Provided:**

Sl. No.	Input provided under ARYA project	Amount (Rs)
1	Construction materials low cost mushroom housing (450 ft ²)	20,000
2	Mushroom spawn 600 nos.	15,000
3	Others (Sprayer, plastic bag, syntax, poly bag etc)	20,000
	Total	55,000

- **Progress Made:** A total of 25 mushroom units have established involving 51 rural unemployed educated youth. Out of the 51 rural youths, 30 no. of youths are running the entrepreneurial units in a sustainable manner earning an annual income of Rs. 50,000 to Rs. 80,000.

Discipline area: Horticulture

- **Name of Enterprise:** Cut flower

- **Objectives of the Enterprise:**

1. To establish floriculture unit for production of cut flowers
2. To help the rural youth in sustaining their livelihood and employment
3. To develop entrepreneurship in cut flower production

- **Detailed description:** The selected rural unemployed educated youth who have qualify the criteria laid down under the ARYA project imparted 5 days skill training on scientific cut flower production and management. After completion of the training program, construction materials were provided to the youth for construction of poly house. 2000-2500 nos of bulbs/suckers of lilium/gerbera along with organic manure and other materials were also provided.

- **Input/ Support Provided:**

Sl. No.	Input provided under ARYA project	Amount (Rs)
1	Construction of poly house of 100 m ² with poly film of 200 micron and side wall with 75% green shade net	1,28,000
2	Lilium (2000 bulb), 500 sucker Gerbera	76,000
3	Other (fertilizers, organic manures, fungicides and pesticides, water sprayers)	30,000
	Total	2,34,000

- Progress Made:** A total of 6 cut flower production units have established involving 6 rural unemployed educated youth. Out of the 6 rural youths, 5 no. of youths are running the entrepreneurial units in a sustainable manner earning an annual income of Rs. 80,000 to Rs. 1, 30,000.



2.3.vii. Capacity Development:

Thematic Area	Topic of Training	No. of Courses	No. of Beneficiaries		
			Male	Female	Total
Piggery Enterprise	Scientific rearing of pig (Housing, Health care and Management, Vaccination, Artificial Insemination, Marketing)	5 trainings (5 days each)	78	42	120
Poultry Enterprise	Scientific rearing of poultry (Housing, Health care and Management, Vaccination, Hatchery management, Marketing)	5 trainings (5 days each)	46	59	105
Mushroom Enterprise	Skill training of mushroom production, Spawn production, processing, value addition and marketing of mushroom.	4 trainings (5 days each)	30	55	85
Cut flower Enterprise	Training on cut flower production (Management, Packaging, processing, value addition and marketing)	4 trainings (5 days each)	17	43	60

2.3.viii. Economic Profitability:

Name of Enterprise	Area (Acre)/ No.	Cost of Production (Rs per unit per year)	Gross Return (Rs. Per unit per year)	Net Income (Rs. per Unit per year)
Piggery	5 Chambers (6 ft x 6 ft) each 5 piglets (4 female & 1 male)	1,20,000	2,97,000	1,37,000
Poultry	(900 ft ²) 350-400 no. of bird capacity	90,000	2,85,000	1,22,000
Mushroom	(30 ft x 15 ft) 400 mushroom bags capacity	40,000	1,10,000	70,000
Cur flower	100 m ² (1500 nos. of flowers)	1,50,000	1,87,000	1,25,000

2.3.viii. Income level per Rural Youth:

Name of KVK	Name of enterprise	No. of Youth running the entrepreneurial units in a sustainable manner	Annual Income per youth before adopting ARYA project (in Rs.)	Annual Income per youth after adopting ARYA project (in Rs.)	Difference in average annual income per youth (in Rs.)
KVK, Wokha	Piggery	42	20,000	1,37,430	1,17,430
	Poultry	33	15,000	1,09,550	94,550
	Mushroom	34	11,000	72,765	61,765
	Cut flower	6	22,500	1,26,500	1,04,000

2.3.ix. Impact:

Indicators	Piggery	Poultry	Mushroom	Cut flower
No. of youths established their own entrepreneurial units	55	54	51	6
No. of youths/groups who are running the entrepreneurial units in a sustainable manner	42	33	34	6
Average Size of each entrepreneurial unit (e.g. No. of goats/poultry bird/bee hive boxes/pigs etc., per enterprise unit)	5 nos. (4 sow & 1 boar)	250 nos. of adult birds	400 nos. of mushroom bags	1500 nos. of flowers
Per unit cost of production (Rs)	90,000 to 1,40,000	80,000 to 1,00,000	30,000 to 40,000	1,50,000
Sale value of the produce in the market: Rs/Kg or Rs/Qtl	₹ 3,500 piglets ₹ 220 per kg in live	₹ 320/kg live poultry	₹ 220/ kg mushroom	₹ 10- 20 / cut flower
Economic gains from the entrepreneurial units Rs/unit/year	1,37,000	1,22,000	70,000	1,25,000
Employment generated due to establishing entrepreneurial units: No. of youths who got employment for how many days in a year	42 youths, 300 days	33 youths, 237 days	27 youths, 195 days	10 youths, 260 days
Average Employment Generation (No. of days): Per person/ Year	300 days	237 days	195 days	260 days
Av. Income Generation (Rs): Per person/Year	1,17,430	94,550	61,765	1,04,000
How many farmers in the village started this Enterprise?	16	11	10	2
Did it spread to the neighbouring villages? If so, specify no. of villages	13	21	24	11
No of migrants benefitted	18	35	15	8

II. New KVKs

2.4.i. Name of KVK: KVK Jaintia Hills

2.4.ii. Project Initiation: Year 2018-2019

2.4.iii. District Profile (In details): West Jaintia Hills District is one of the 11 (eleven) districts of the state of Meghalaya. The total area of the district is 1693 Sq.kms. The district comprises of 1(one) Civil Sub-Division Viz. Amlarem Civil Sub-Division and 3(three) Community and Rural Development Blocks viz. Amlarem C&RD Block, Laskein C&RD Block and Thadlaskein C&RD Block. The district has a total population of 2,70,352, of which 1,34,406 are males and 1,35,946 are females. The density of Population is 159.69 per sq. km. The net sown area and total cropped area of West Jaintia Hills district is 19650 ha and 20039 ha respectively. The cluster villages (Sohphoh, Niriang, Lumkhudung, Moodymmai, Trychang & Wahiajer) under ARYA Project falls under Thadlaskein Block C&RD Block.

2.4.iv. Identification of Youth (Age group and number of youth):

Age group: 18-35

Number of youth: 100

2.4.v. Name of co-operating institutions for technical support: Nil

2.4.vi. Enterprise Details

Discipline area: Plant Protection

Name of Enterprise: Mushroom Production

Objectives of the Enterprise:

- i. Stable income generation from subsidiary agriculture enterprises.
- ii. To encourage effective and optimize use of natural resources.
- iii. To address and promote effective marketing of locally grown products for addressing food demands of the local population.

Detailed description: A number of 5 youths out of the 25 youths who were trained have been selected for promoting mushroom production as an enterprise. For the project, the youths have been technically trained and psychologically motivated to develop the enterprise into an entrepreneurial mode. As such, adequate technical assistance, input support and moral guidance have been provided by the KVK so that the objectives of the project are realized.



Input/ Support Provide:

- i. A 50% financial assistance has been provided for the youth for construction of the concrete mushroom house of 10 by 12 ft.
- ii. Mushroom spawn has been provided to each of the youth.
- iii. Mushroom Baskets, Syntax, tarpaulin and other required accessories for taking up the enterprise has been provided to the youths.

Progress Made:

- i. At present, all the units are functional.
- ii. The enterprise has shown promising results and is expected to advance towards a major entrepreneurial mode which has provided a major subsidiary income.
- iii. From one unit, an amount of Rs. 18000/- per year (2019-20) has been earned throughout the year.
- iv. The youths have shown immense interest and have sought for more assistance on the processing of the mushroom for higher economic gains.
- v. Some youths and farmers in the village have developed interest and started to try it out on their own for the production of oyster mushroom through the adopted youths.
- vi. The product has been locally marketed at Jowai and Ummulong and sold at a price of Rs. 200/kg.

Discipline area: Agronomy

Name of Enterprise: Vermi-compost unit



Objectives of the Enterprise:

- i. To improve the socio-economic status of the rural employed youths in the district
- ii. To see the impact of vermicompost production on income and employment generation for unemployed rural youths
- iii. To provide excellent quality organic manure which is highly efficient, cost effective and ecologically sound input for sustainable agro-practices.

Detailed description:

In this project, a total of 10 youths were covered divided into 5 groups. In each group a total of 2 youths work together. Every youth covered were in between the age group of 18-35 years old who are either school or college dropouts who are ready to take up vermicomposting in a sustainable manner for income generation

Input/ Support Provide:

- i. 50% of the total cost of construction of the Vermicomposting unit
- ii. Vermicompost shed, cowdung, earthworms
- iii. Technical support whenever required

Progress Made:

- i. A net profit of Rs 25,200 was benefitted from each group.
- ii. The marketing of the compost is under progress and the brand name for product is yet to be given
- iii. Seeing the progress of the ARYA youths, more number of youths are taking up this enterprise as a means for generating additional income
- iv. The youths not only earn money, but also aid society by providing excellent quality organic manure for sustainable agro-practices.

Discipline area: Protected cultivation of vegetable crops

Name of Enterprise: Walk in tunnel for off season vegetable production

Objectives of the Enterprise:

- i. To produce off season vegetables for higher profitability
- ii. To produce year round vegetables for year round income



Detailed description: For developing entrepreneurship, twenty five youths were trained with appropriate knowledge and skills related to Walk in tunnel for off season vegetable production. Five youths established the enterprise in the year 2019-2020. Each youth possessed 4 tunnels per unit and the size of each tunnel is 15m x 2m x 1.5 m. The crop rotation to be followed is Tomato –Capsicum- Cucumber.

Input/ Support Provide:

- i. 70% financial assistance has been provided for the youth for construction of the tunnels
- ii. Polythene cladding material, tomato seeds, bio-fertilizers, bio-pesticides, garden tools set of 2, watering can

Progress Made: One crop season of tomato is still in vegetative stage

Discipline area: Animal Husbandry and Veterinary

Name of Enterprise: Poultry production

Objectives of the Enterprise:

- i. To improve the socio-economic status of the rural employed youths in the district
- ii. To motivate the rural youths in taking up poultry enterprise as a business model for employment generation
- iii. To meet the increasing demand of meat and egg in the district
- iv. To sensitize the youths on the importance of poultry production



Detailed description: In this project, a total of 15 youths were covered divided into 5 groups. In each group a total of 3 youths work together. Every youth covered were in between the age group of 18-35 years old who are either school or college dropouts who are ready to take up poultry farming in a sustainable manner for income generation

Input/ Support Provide:

- i. 50% of the total cost of construction of the poultry shed including the innovative egg laying cabin
- ii. 300 numbers of Vanaraja birds given in two cycles
- iii. Equipments like feeders, waterers, buckets, mugs, room thermometers

- iv. Vitamins, Mineral mixtures and poultry medicines
- v. Starter feeds during the initial stages
- vi. Technical support whenever required



Progress Made:

- i. Poultry enterprise is leading the way in terms of income generated with a net profit of Rs. 1, 35,750 from each group.
- ii. The eggs produced by the youths are marketed under the brand name “Farm Eggs”
- iii. A total of 6 numbers of youths got attracted to this enterprise from the nearby villages
- iv. A success story has been published at Caritas India website regarding 1 youth who got attracted to this enterprise and is now a regular supplier of Vanaraja and Broiler chicks in the district. In just a span of 1 month she earned a net income of Rs. 25000 which prompted her to take up poultry farming at a larger scale.
- v. With the increasing demand of poultry meat and eggs and seeing the progress of the ARYA youths, more number of youths are taking up poultry farming in a larger scale
- vi. Poultry hatcheries will be procured in the coming days in order to meet the heavy demand of chicks especially the improved varieties like Vanaraja, Srinidhi and Gramapriya.
- vii. Stalls will be set up very soon for marketing the products of ARYA youths
- viii. More number of villages are expected to be covered under this project

2.4.vii. Capacity Development:

Thematic Area	Topic of Training	No. of Courses	No. of Beneficiaries		
			Male	Female	Total
Income generation	Mushroom Production	5	5	20	25
On and off farm waste management	Vermicomposting	5	13	12	25
Protected cultivation of vegetable crops	Walk in tunnel for off season vegetable production	10	14	11	25
Poultry production	Poultry farming	5	12	13	25

2.4.viii. Economic Profitability:

Name of Enterprise	Area (Acre)/ No.	Cost of Production (Rs per unit per year)	Gross Return (Rs. Per unit per year)	Net Income (Rs. per Unit per year)
Mushroom Production	Size of the unit: 10 by 12 ft	68,000	72,000	4000
Vermicomposting unit	3mx1mx0.6m (5 Vermibed/ unit.)	1,00,000	1,25,200	25,200
Walk in tunnel for off season vegetable production	120sqm	70,000	Production stage	Production stage
Poultry Production	450 square feet per unit	1,00,000	2,35,750	1,35,750

2.4.ix. Income level per Rural Youth:

Name of KVK	Name of enterprise	No. of Youth running the entrepreneurial units in a sustainable manner	Annual Income per youth before adopting ARYA project (in Rs.)	Annual Income per youth after adopting ARYA project (in Rs.)	Difference in average annual income per youth (in Rs.)
KVK, Jaintia Hills	Mushroom Production	5 groups (4members)	8000	18,000	10,000
	Vermicomposting unit	5 groups (2 youths)	4300	13,300	9000
	Walk in tunnel for off season vegetable production	5 groups (2 youths)	Production stage	Production stage	Production stage
	Poultry Production	5 groups (3 youths)	15,000	45,250	27250

2.4.x. Impact:

Indicators	Mushroom production	Vermicomposting unit	Walk in tunnel for off season vegetable production	Poultry production
No. of youths established their own entrepreneurial units	4	1	Nil	6
No. of youths/ groups who are running the entrepreneurial units in a sustainable manner	5 groups (4 members)	5 groups (2 youths)	5 groups (2youths)	5 groups (3 youths)
Average Size of each entrepreneurial unit (e.g. No. of goats/poultry bird/behive boxes/pigs etc., per enterprise unit)	10ft*12 ft (60 bags/ unit)	3mx1mx0.6m (5 Vermibed/unit.)	4 tunnels per unit Size of each tunnel- 15mx2mx1.5m	450 sq ft for 200 birds/ unit
Per unit cost of production	Rs 1,00,000 (50% from KVK) & Rs 18,000 input support	Rs 1,00,000 (50% from KVK)	Rs. 70,000/unit (70% from KVK)	Rs. 1,00,000/ unit (50% from KVK)
Sale value of the produce in the market: Rs/Kg or Rs/Qtl	Sold at Rs.200/ kg fresh Oyster mushroom	Rs. 30 kg vermicompost Rs 50/litre vermiwash Rs 2 /earthworm	Tomato @ Rs 15-20/kg Capsicum @ Rs 50-70/kg Cucumber @ Rs 20-25/kg	Average price of live bird: Rs 250/kg- , Egg Rs. 10 per egg

Economic gains from the entrepreneurial units Rs/unit/year	72,000	25,200	Production stage	1,35,750
Employment generated due to establishing entrepreneurial units: No. of youths who got employment for how many days in a year	20	10	10	15
Average Employment Generation (No. of days): Per person/ Year	50	172	75	365
Av. Income Generation (Rs): Per person/Year	18,000	13,300	Production stage	45,250
How many farmers in the village started this Enterprise?	4	2	5	6
Did it spread to the neighbouring villages? If so, specify no. of villages	2	3	2	2
No. of migrants benefitted	Nil	Nil	Nil	Nil

2.5.i. Name of KVK: Tuensang: Nagaland

2.5.ii. Project Initiation: 2019

2.5.iii. District Profile (In details):

Tuensang district is located at the Northeast corner of the state of Nagaland, covering an area of 4228 sq. km. (1991 census). It has a 180 km. long International

border with Myanmar in the east, Mon district in the north, Assam in the Northwest, Mokokchung and Zunheboto districts in the west and Phek district in the south. Tuensang district, which earlier included the present Mon district, was brought under the administration of the Naga Hills in 1948. Subsequently, along with parts of the North- eastern Frontiers Tract, the Naga tribal area of Tuensang was renamed the Northeastern Frontier Agency (NEFA). In 1954 the administrative units were reconstituted with redefined boundaries, and the Tuensang area came to be known as Tuensang Frontier Division. In 1957, TFD was separated from NEFA and joined with Naga Hills to form a new administrative unit called Naga Hills Tuensang Area, (NHTA). On December 1, 1957 and later under the agreement, NHTA, was re-designated which came to be known as the state of Nagaland in 1961 and placed under the Ministry of External affairs on the 1st of December 1963, when the State of Nagaland was inaugurated, the Tuensang Frontier Division was divided into two different districts of Tuensang and Mon. The district comprise of 20 administrative circles with 13 blocks and 251 villages. According to the 2001 census the district consisted of only 1 recognised town with 1681 goanburas and 3141 village council members.

2.5.iv. Identification of Youth (Age group and number of youth):

The youth under ARYA were not selected randomly but based on the selection criteria under the guidelines. All the youth's beneficiaries for ARYA were selected during the vocational training programme organized by the KVK before the actual implementation of the project. These participating youth were screened and categorised for the each enterprise. In the first phase 21 youths aged between 18-30 years were selected as ARYA beneficiaries with 10 under large cardamom, 6 under Mushroom and 5 under Poultry production covering 17 villages under Tuensang district. Out of the total 21 selected rural youth under ARYA, 18 beneficiaries are under metric dropouts, 3 are matriculate youths and 1 post graduate. As per the preliminary survey all the youth depend on their family farming.

2.5.v. Name of co-operating institutions for technical support: District Horticulture, Vety & AH department and ATMA

2.5.vi. Enterprise Details

- **Discipline/area:** Crop Production
- **Name of Enterprise:** Large Cardamom production

- **Objectives of the Enterprise:**

To attract and empower the youth with technical knowledge and skills in agriculture and engage them in income generating agricultural activities, developing them into entrepreneurs.

- **Detailed description:** Large Cardamom Cultivation

In the sub-temperate areas of the district Large Cardamom cultivation is being promoted under ARYA project. The villages covered under Large cardamom cultivation are Kuthur, Chingmelen, Chendang, Hakchang, Chungliyimti, Tuensang village. Based on the potentiality and climatic suitability of the district, large cardamom cultivation was selected as one important enterprise in ARYA project. In the initial phase of the project intensive vocational training were organized in the district for rural youth covering all the blocks. 10 drop out youths of 18-30 years of age was selected through these training for establishing large cardamom production enterprise. Orientation program was organized for these selected youths before establishing production unit. These benefitting youths are from 6 different village covering 3 blocks of the district. Every benefitting youth possessed 1 acre (some more) unit of cardamom plantation on an average. Farm handling unit has been constructed in every unit. In the initial 1st year period, 4000 planting material of seed origin was supplied. For gap filling and extension of the area in the 2nd year (2020), 2000 seedlings were provided. Detailed input support provided for establishing the enterprise is given in the next table. The crops are in its 2nd year vegetative stage and are performing well. The crop is anticipated to be in its reproductive stage by 2021. This reporting year (2020), 2nd phase Bio-Nutrient and plant protection measures were applied and are also scheduled in the month of September. Alder nepalensis is natural growing vegetation in Tuensang. Considering the steep sloppy nature of the topography and its impact on soil and nutrient depletion, the implementing agency is also promoting alder plantation in the cardamom plot not only as shed trees but also to revive the soil organically.

One important achievement of the project is, out of the 10 involved youths who have established large cardamom plantation, 5 best performing enterprise have been linked to the Department of Horticulture in the district for micro irrigation scheme which is expected to be installed in the year ending before the dry season begins to provide life saving irrigation during moisture stressed months.

- **Progress Made:**

Large Cardamom Production): 10 large cardamom units have been established by 10 rural youths involving 6 villages covering 4 blocks in the district. The units are in its 2nd year vegetative growth stage which is anticipated to reach its reproductive stage by 3rd to 4th year.

2nd phase gap filling, extension and application of bio-organic nutrients have been completed. Second round application of Bio- nutrients has been scheduled in the month of September. Precautional plant protection measures were to be initiated in the month of July but the inputs are yet to reach Tuensang due to lockdown. So far no pest and disease occurrence has been observed.

- **Discipline/area:** Crop Production & Livestock production
- **Name of Enterprise:** Mushroom production
- **Details of enterprise:**

To develop entrepreneurship, 24 youths were trained with appropriate knowledge and skills related to mushroom production. 6 youths were selected in the first phase to established Mushroom production enterprise in the year 2019-20. Selected youth were supplied with 288pkts of spawn for making 512 mushroom bags on an average for starting the production process. From each unit, 615kg of mushroom at an average was harvested worth of Rs.123, 000. Thus, a youth earned Rs. 74,050 annually. Farmers usually sell their produce by direct marketing in daily market or by local home delivery channels.



Progress Made: 6 entrepreneurial units are running in a sustainable manner but due to pandemic no spawn available.

- **Discipline/area:** Livestock production
- **Name of Enterprise:** Poultry production
- **Details of enterprise:**

Poultry meat has high demand in the district however most of the demands are made with imports from neighbouring state. Taking into consideration its importance in generating employment in unemployed sectors, inconsonance with the objective of ARYA, poultry production enterprise was targeted to attract



and retain youth as one lucrative enterprise to generate income and self employment for youth in the district. In the first year 2019 as preliminary activities, three training were organised covering 27 rural youths to transfer appropriate knowledge and skills related to poultry production. Out of the total youth trained, 5 youths have established a full functional enterprise earning an average income of Rs. 133400/- annually. Besides, earning from poultry production, the youth also earn from other by-products like FYM at an average of Rs. 30000/- per youth/annum. The products are marketed to flower growers' association in Tuensang which is also promoted by Krishi Vigyan Kendra.

Progress Made:

In the first year, 5 selected youths were supported under the project for establishing poultry production unit. All have established full functional poultry production unit. At present production is faced with non-availability of chicks in view with the series of inter and intra state lock down.

2.5.vi.Input/ Support Provided:

Enterprise	No. of Unit	Input support Provided
Large Cardamom cultivation	10 unit	<ol style="list-style-type: none"> 1. Farm handling Unit for 10 unit (288 ft² area) 2. Knapsack sprayer, Secateurs, Cardamom pruning & Harvesting tools 3. Trichoderma Veridi @ 2kg per unit for 10 unit 4. Planting material @ 6000nos. per unit for 10 unit 5. Plant protection measures (Copper Oxychloride, Neem oil) 6. Organic Nutrients (2kg per unit) for post application.
Mushroom production	6 unit	<ol style="list-style-type: none"> 1. Low cost mushroom house (150 ft²) for 6 units. 2. Mushroom spawn 1800 pkts of spawn for 6 unit 3. PP bags, sprayer, utensils, Syntax, weighing scales etc for six unit
Poultry production	5 unit	<ol style="list-style-type: none"> 1. Construction of Poultry Shed 2. Chicks, 200 nos. per unit 3. Feed for 10 unit 4. Equipments: Bucket, lighting provisions, Feeder & Waterer etc. for 10 production unit 5. Vaccines & Medicines for 10 production unit

2.5.vii. Capacity Development:

Thematic Area	Topic of Training	No. of Courses	No. of Beneficiaries		
			Male	Female	Total
Large cardamom Production	<ol style="list-style-type: none"> 1. Large cardamom production technology 2. Care and management of young cardamom plantation 3. Pest and disease management in Large Cardamom 4. Orientation cum follow-up training program for ARYA beneficiaries under Enterprise: Large cardamom. 	4	39	-	39
Mushroom Production	<ol style="list-style-type: none"> 1. Mushroom production Technology 2. Disease control and pest management activities, casing and pinning for mushroom cultivation 3. Harvest and post-harvest procedures of mushroom 	3	15	9	24
Poultry production	<ol style="list-style-type: none"> 1. Poultry production for income generation 2. Disease management in poultry birds 3. Feeding and feeds management in poultry 	3	15	12	27

2.5.viii. Economic Profitability:

Name of Enterprise	Area (Acre)/ No.	Cost of Production (Rs per unit per year)	Gross Return (Rs. Per unit per year)	Net Income (Rs. per Unit per year)
Large Cardamom production	10 Acre	Economic profitability is not provided as the enterprise has not reached its reproductive stage. However including the immovable asset like Farm handling unit with other inputs the average cost for establishing large cardamom production unit in the 1 st year is Rs. 75000 per unit.		

Mushroom Production	156 ft ² per unit (6 units)	48950	123000	74050
Poultry production	540 ft ² per unit (5 unit)	68500 (Exclusive of initial establishing cost for setting up poultry shed & equipments)	201900	133400

2.5.ix. Income level per Rural Youth:

State	Name of KVK	Name of enterprise	No. of Youth running the entrepreneurial units in a sustainable manner	Annual Income per youth before adopting ARYA project (Rs.)	Annual Income per youth after adopting ARYA project (Rs.)	Difference in average annual income per youth (Rs.)
Nagaland	Tuensang	Large cardamom production	10	13500 (Av. Income from daily wage earning)	The enterprise is in its 2 nd year vegetative stage.	
		Mushroom production	6	-	74,050	12,341
		Poultry production	5	8000-15000 (daily wage earning)	133400	118400

2..5.x. Impact:

Large Cardamom Production: Encouraging rural youths to establish large cardamom production unit for self employment and income generation through ARYA project has raised a series of awakening among the other rural youths who have been engaging in daily wage earnings. Though the project has supported only 10 youths in the first phase many youths in Hakchang, Chingmelen Kuthur and Chendang have started Large cardamom cultivation within this two years outside the project. Some youths have

approach KVK, to assist them in input materials like tools & implements, plant protection inputs support. The implementing agency feels that material support to these youth who have taken up large cardamom enterprise on their own can amplify the objective in retaining youths in agriculture in the district.



Mushroom production: 6 youths/groups are running the entrepreneurial units in a sustainable manner with 512 bags/Units and 150sqft area (Average Size of each entrepreneurial unit. Per unit cost of production is Rs. 48950/unit. Sale value of the produce in the market is Rs. 200/kg. Thus a youth earns an average income of Rs. 74050 annually and an average income of Rs. 6170.8 per month.



Poultry production: In the first year, 5 selected youths established poultry production unit through the support of project. At present production unit are facing problems due to non-availability of chicks in view with the series of within and outside state lock down. Though the intervention is yet to gain momentum, livestock production has become one important self employment option for rural youths considering



2.6.i. Name of KVK: KVK, Dhalai

2.6.ii. Project Initiation: 2019-20

2.6.iii. District Profile (In details):

Particulars	No/percentage
Total population of district	378000
No of farmers family	64383
Agriculture labourer	42201
Total unemployed youth male	43024
Total unemployed youth female	23700
No of GP/VC	151
Village covered till dated	3
No. of youth covered during the year	35
% Literacy rate	70.8

2.6.iv. Identification of Youth (Age group and number of youth): 25-35

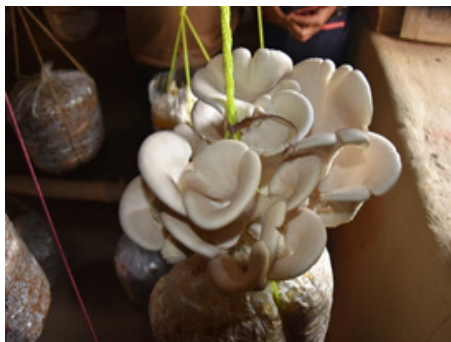
2.6.v. Name of co-operating institutions for technical support: State Agricultural Research Station, Arundhutinagar

2.6.vi. Enterprise Details

- **Discipline area:** Agriculture
- **Name of Enterprise:** Vermi composting
- **Objectives of the Enterprise:** Encouraging the rural youth for self employment through Vermicomposting
- **Detailed description:** Farmers are facilitated with training and exposure visit along with financial support for construction of 2 (two) nos. pakka vermi tanks measuring 10 x 3 x 2.5 ft.
- **Input/ Support Provide:** financial support of Rs. 20000/- provided to each youth for construction of two nos. vermin tank.
- **Progress Made:** till dated 30 nos. vermi tanks has been established covering 15 nos youth.
- **Discipline area:** Horticulture
- **Name of Enterprise:** Mushroom Production Unit



- **Objectives of the Enterprise:** Employment Generation of Rural Youth through Quality Mushroom Production
- **Detailed description:** Farmers are facilitated with training and exposure visit along with financial support for construction of low cost mushroom house and inputs like spray machine and spawn etc.
- **Input/ Support Provide:** financial support of Rs. 20000/- provided to each youth for construction mushroom house and spawn provided from KVK
- **Progress Made:** till dated 15nos. unit has been established covering 15 nos. youth



- **Discipline area:** Horticulture
- **Name of Enterprise:** Small Nursery
- **Objectives of the Enterprise:** Sustainable Livelihood Promotion through Establishment of Small Nursery for Commercial Planting Materials Production of Major Fruit Crops
- **Detailed description:** Farmers are facilitated with training and exposure visit along with financial support for construction of net house (200 Sqm.) having 50% light diffusion shading nets and sprinkler system of irrigation.



- **Input/ Support Provide:** Financial support of Rs. 250000/- provided to each nursery group for establishment of net house. Other inputs like need based items / machine (Propagation kits, Sprayers, Trolley, Irrigation pipes, Root trainers, Water cans, Secateur, Knives, Spade, Khurpi, etc.) and Operational cost (Expenses involved in production and management of nursery inputs like seeds, cuttings / planting material, FYM, insecticides, pesticides, polythene bags, portray, poly caps, plastic sheets, repair, skilled and unskilled labours, one iron display board, etc. were provided.

Progress Made: till dated 2nos. unit has been established covering 10 nos. youth

2.6.vii. Capacity Development:

Thematic Area	Topic of Training	No. of Courses	No. of Beneficiaries		
			Male	Female	Total
Vermi composting	Production technology of vermin-composting	3		5	30
Mushroom Production	Production technology on year round mushroom production	3	20	10	30
Nursery management	Training on management of Horticulture nursery	2	15	5	20

2.6.viii. Economic Profitability:

Name of Enterprise	Area (Acre)/ No.	Cost of Production (Rs per unit per year)	Gross Return (Rs. Per unit per year)	Net Income (Rs. per Unit per year)
Mushroom production	15	10000	56000	46000
Vermi composting	15	8000	37800	29800
Horticulture Nursery	2	50000	Sale not yet started	

2.6.ix. Income level per Rural Youth:

State	Name of KVK	Name of enterprise	No. of Youth running the entrepreneurial units in a sustainable manner	Annual Income per youth before adopting ARYA project (in Rs.)	Annual Income per youth after adopting ARYA project (in Rs.)	Difference in average annual income per youth (in Rs.)
Tripura	Dhalai	Mushroom production	15	15000	46000	31000
		Vermi composting	15	12000	29800	17800
		Horticulture Nursery	2	-		

2.6.x. Impact: The impact of the project is very visible in the district as more and more youth are getting attracted towards agricultural activities by seeing the income potential. However the impact can be seen much more in near future when value addition, and processing units will be established. Each of the youth attached with the project is highly motivated to upscale the project in their villages.



PART-3

Success Stories

3.1. Poultry Management, Lunglei

- Introduction:** ARYA project is being implemented in Thazawl village of Lunglei from 2016. Total population of the village is 384 in which the youth percentage is 54. The introduction of ARYA project in the village provided an opportunity to create additional income and employment through the identified enterprise. Mr. David K. Zodinpuia from Thazawl village is a graduate student but unemployed. He underwent various training including skill development training in aspect of backyard poultry rearing. He now owns Broiler rearing unit in Thazawl.
- Progress Made:** Currently, he is rearing 300-400 chicks per batch in his farm.
 Production of 1300 birds in 2019-2020
 Cost of 1 kg meat in the state is Rs 250/kg (live bird)
 Gross income- Rs 975000/year
 Net income- Rs 835000/year
- Benefit to Youth:** Attended training on Poultry management conducted by ARYA: Employment generated for 1 Farmer
 ARYA project helps in Renovation of poultry houses
 Supply of medicines
 Hygienic meat production
- Perception of others in the village:** The products were marketed to different districts like Lawngtlai, Saiha and to Lunglei. He participated in different entreprenier competition in Mizoram like Start up India Yatra & Micro start



up Capital Competition (Leihlangpui, Mizoram Rahbi). Seeing his journey many youths were attracted to poultry farming.

- **Conclusion:** From the project initially 50 birds was supported along with training, feeds and medicine. Presently the youth has expanded the farm up to 500 birds capacity and run his farm successfully.



3.2. Piggery Unit, Lunglei

- **Introduction:** Thaizawl village is located on the South of Lunglei district. Total population of the village is approximately 384 numbers, out of which youth contributed 14percent. Mr. H.laltanpuia is a post-graduate student starting his pig breeding unit at Thaizawl village. He has started pig farming with his father's savings from 2015 with 5 sows and a boar near his home. Recently he has 26 sow and 3 boars in his farm and the number of pigs on their farm reaches more than 100 in a year.
- **Progress Made:** Currently he is rearing 26 sows and 3 boars in his farm.
Production of 160 piglets in the year 2019-2020
Cost of a piglet in the state is Rs 6000/piglet
Gross income- Rs 960000/year
Net income- Rs 760000/year
- **Benefit to Youth:** Reduction in cost of feed by incorporating homemade feed partially
Have his unit of maize processing unit for feeds
Employment generated to 2 youth
Quality piglet production and supply of piglets to highly demand areas
Supply of medicines which increase productivity
Renovation of houses through the project
- **Perception of others in the village:** Piglets were distributed to different



parts of the state. He supplies good quality piglets - Hampshire and Large white Yorkshire. Seeing his continuous supply of piglets people in the villages were attracted in rearing good quality breeds.

- **Conclusion:** From the project, he was supported with medicines, feeds, trainings and renovation of housing. His piglets were also distributed to other ARYA beneficiaries located in different villages.

3.3. Mushroom production Unit, Lunglei

- **Introduction:** Ramthar village has a population of 3320 and the youth percentage is 46. Mushroom production has gained recent traction in Mizoram owing to its low input cost. Mrs Lalnuntluangi residing at Ramthar, Lunglei is an example who achieved tremendous success in mushroom farming. She is a housewife and helps in taking care of the family while her husband is an auto-rickshaw driver. She has started the cultivation of mushroom from 2016 on a small scale.



- **Progress Made:** Currently she is capable of cultivating 300 numbers of blocks of mushroom within a year

Employment generation for one youth during block production

Production of 420-450 kg of mushroom in a year

Cost of a fresh mushroom in the state is Rs 300/kg approx.

Gross income- Rs. 135000/year

Net income- Rs 105000/year

- **Benefit to Youth:** Before ARYA intervention, her income was Rs 10,000 annually. After ARYA her income crossed 1 lakh annually. Trainings on mushroom cultivation which increased her skills and knowledge. Exposure visit to Mizoram University, Aizawl motivate and encourage her in the enterprise.



- **Perception of others in the village:** As Market demand of oyster mushroom is high youths were attracted in mushroom cultivation and the project. People become aware of the nutritional value it contained by ARYA project.
- **Conclusion:** Initially mushroom spawn and straws were given to her. She constructed low cost mushroom house and Presently she could produce 100 blocks of mushroom in one cycle which serves as the main source of income to support her family.

3.4. Bee keeping, Lunglei

- **Introduction:** Theiriat is a village with a population of 1811 with 50 percent youth. Long time ago, farm families would take up bee keeping as a hobby and Mr. F. Ramfangzauva from Theiriat, Lunglei is one of them. He started with 4 bee boxes in 2016 and harvested around 10 kgs of honey from the boxes. In 2017 he expanded and spread them to different parts of the villages and nearby villages.
- **Progress Made:** Currently he owned 100 numbers of bee boxes in his farm
Employment generation for 2youths during harvesting and swarming.
Production of 230kg of honey in a year
Cost of a honey in the state is Rs 800/kg
Gross income from honey - Rs. 184000/year
Net income from honey- Rs. 145000/year
- **Benefit to Youth:** Before ARYA his annual income was Rs 30,000. After ARYA his annual income crossed 1.5 lakhs. Trainings on Scientific Bee keeping improves skills and technical knowledge. Technology to design scientific bee boxes. Technical support in branding of his honey- Fanai Bee which would help the firm for higher market value.
FSSAI certificate was given to the firm for increasing the market valu
- **Perception of others in the village:** The honey was sold as Fanai Bee and seeing



his pure honey many people became interested in bee keeping and attracted many into the field.

- **Conclusion:** Initially he was given 5 bee boxes. After 2 years he has 100 bee boxes in his farm and can harvest 230 kgs of honey in a Year. His honey were labeled as Fanai bee which fetch a good price in the market. He is running the enterprise in a sustainable manner and main source of his income is bee-keeping.

3.5 Pig Breeding Enterprise, Senapati

For developing entrepreneurs, 30(Thirty) youths were trained with appropriate knowledge and skill in pig breeding techniques for the production of quality piglets. Out of which only 6 (six) youths initially established the enterprise/unit in 2016 with a unit size of 2 boars and 10 sows under ARYA Project. The unit, on an average, produced about 200 piglets worth Rs 9.0 lac during 2019-



20 with 7.56 lac net income. Thus, a youth could earn about Rs1.26/- lac per year during 2019-20.with an average employment generation for 182days/ youth/year. The piglets were sold in weekly markets and were also sold at farm gate at the selling price ranging from Rs.4500 to Rs. 5000/ piglet

3.6. Large Cardamom Production, Tuensang

- **Introduction:** ARYA project is being implemented in Tuensang district of Nagaland under Krishi Vigyan Kendra to make agriculture more lucrative and provide self employment to unemployed rural youth in the district. The selected youths under three enterprises covers four blocks of the district namely Sangsangnyu, Longkhim-Chare, Shamator, Noklak and Chessore blocks representing all four tribes of the district and covering 17 villages in the first phase. In the sub-temperate areas Large Cardamom cultivation is being promoted. The villages covered under



large cardamom cultivation are Kuthur, Chingmelen, Chendang, Hakchang, Chungliyimti, Tuensang village. Under Poultry production the involved youths are from Khudie, Alisopur, Chare, Kuthur and Chingmelin village. And in Mushroom production the villages covered are Kusong, Angangba, Nokhu, Chiphur Thsoiphu, Yemrup and kuthur village. As per the preliminary survey, the total number of unemployed rural youths in the intervened 17 villages constitutes 8561.

- **Progress Made:** Since the inception of the project in 2019, KVK-Tuensang as an implementing agency, has been equipping the rural youths with the technology backed self employment options in the district. Much progress has been made within this period. The project has three main enterprises namely Large Cardamom cultivation, Mushroom production and Poultry production which are being promoted.



Under Large Cardamom enterprise, out of the total 39 rural youths that were trained, 10 youths have well established production unit through the project support involving 6 villages covering 4 blocks in the district. The units are in its 2nd year vegetative growth stage which is anticipated to reach its reproductive stage by 3rd to 4th year. During June 2020, for 2nd Phase gap filling and area extension planting materials of seed origin was distributed to all the beneficiaries.



3.7. Mushroom Production, Tuensang

In mushroom production 6 youths have established entrepreneurial units getting better returns and are running in a sustainable mode.

Apart from the established entrepreneurial unit by the youth, one demonstration unit on Mushroom production has also been established in KVK instructional unit for giving vocational training to the rural youth.



Rural youth engaged in mushroom cultivation Mushroom production, ARYA (2019)

3.8. Poultry Production, Tuensang

- **Introduction:** Under Poultry production, 27 rural youths were trained for setting up enterprise unit out of which 5 youths have established poultry unit through the support of the project.

Rural youths supported and promoted under the project to establish enterprise are strategically selected from different blocks of the district for better horizontal diffusion of the technology and wider adoption for self employment through agriculture.



- **Benefit to Youth:** Through this project 21 rural youths are self employed in three different enterprises (Large cardamom cultivation, Mushroom production, Poultry production), supported by ARYA project. Majority of the youth engaged in ARYA project are school dropout youth who depends on their family with occasional daily wage earnings ranging from 10000-15000 per year. Most of the youth contribute to their family labour



in farming. In the first year of its implementation (2019), 5 youths engaged in poultry production earned an average annual income of Rs. 133400/- with a difference of Rs. 118400/- before adopting ARYA project. Their monthly income has increased from an average of Rs. 1250/- to Rs. 11116.6/-. Under Mushroom enterprise 6 youths are earning an annual income of Rs. 74050/-

Under Large cardamom enterprise 10 youths are employed through the support of ARYA. The established enterprises are still in the 2nd year of its vegetative stage but the growth performances are excellent, some are anticipated to flower in the coming year. Though the units are yet to give economic return the enthusiasm of the youths involved give better hope in their quest to self employment.

- **Perception of others in the village:** The enterprises promoted under ARYA may not be new employment option but the fact that young unemployed youths who have dropout of their schools and having nothing to do on their own, depending solely on their parents income from the farming now have established enterprise of their own, have raised many debate among the other youths and the village. Many parents in the villages has appreciated, deliberating that its time the youth learned to stand on their own to earn and be self employed. The positive outcome of the intervention is not only the perception of the villagers but some youths have started establishing large cardamom cultivation, started rearing few chickens with little income they had.
- **Conclusion:** The ARYA project in Tuensang district was initiated only in 2019 but the progress and its achievement in terms of awareness and perception especially those in the intervened villages in one year period has pushed the expectation and hopes of the rural youths in the district. Tuensang is considered to have the highest unemployed rural youths among the district of Nagaland. Preliminary survey in the intervened 17 villages indicates 8561 unemployed rural youths. Though the project is still in its initial year, it is believed that the project will help in reducing the unemployment problems in the rural areas and bring better income earning options in agriculture for the rural youths.

3.9. Cut Flower Production, Wokha

- **Introduction:** Mr. Thungdemo Ovung is an educated unemployed youth from Hankvu village; he completed his M Sc. in Plant biotech from London, UK. He never opted for a secured govt. /private job; rather he decided to become an entrepreneur through horticulture farming.



- **KVK Intervention:** He came to know about the ARYA project during one of our Agri. and allied meetings with the farmers. Seeing his work, KVK, Wokha advised him to take up cut flower production activities under polyhouse. So in the year 2016, along with other 20 nos. of rural youth, weeklong skill training on cut flower production was imparted to them.
- **Input/ Support provided:** After necessary training, some inputs were provide to him on 28th of January 2017.

Sl. No.	Input provided under ARYA project	Amount (₹)
1	Construction of a poly house of 100 sq. m with polyfilm of 200 micron and side wall with 75% green shade net	₹ 1,28,000
2	Lilium (2000 bulb) in first batch	₹ 64,000 (₹ 32/bulb)
3	Gerbera (500 suckers) in second batch	₹ 25,000 (₹ 50/sucker)
4	Others (Fertilizers, organic manures, fungicides & pesticides & Water sprayer)	₹ 30,000
Total		₹ 2,47,000

- **Progress made:** In the year 2015, he setup 3 nos. of poly houses (1000 m²) for production of tomato organically. During the year 2016, he introduced cut flower production under polyhouse. Today he is earning an annual income of ₹1, 44,900 from cut flower and tomato production.
- **Benefit to youth:** Earlier Mr. Thungdemo had 3 nos. of polyhouses where he cultivated tomato organically. Seeing the importance and demand of flower in the area, he started flower production under a poly house, where he planted lilium on a trial basis. Later on, he was trained on cut flower production under ARYA project. With some technical guidance from KVK,Wokha through the project he was able to double his annual income from both cut flower production and tomato farming within 2 years of implementation of the project. His income during (2017-18) from Lilium production under polyhouse was Rs. 90,000, where he sold 2000 nos of flowers @ Rs. 45/ flower stalk after 3 months of planting the lilium bulb. Additional earning of Rs. 2, 40,000 was generated from selling of tomato (75q) @ Rs. 5000/q and tomato seedling



(1500 nos.) @ Rs. 10/ seedling. Then after first year production of liliu he switched over to gerbera flower production as it produces flower perennially. Moreover, he faced little problem in preservation of liliu bulbs for the next year production. So, in the year 2018-19, he planted gerbera under polyhouse. In the first harvest, he sold 15,000 flower stalk @ Rs. 10/ flower amounting Rs. 1,50,000, which was more than liliu production. In the same year he also earned Rs. 22,50,000 by selling 45 t of tomato @ Rs. 50000/t and 2000 nos. of tomato seedlings @ Rs. 10/seedling.

The produce from the farm were sold in the local market as well as florists in Kohima and Dimapur. Demand of cut flower is high from October to January, this being the wedding seasons for the people of Nagaland. During the other months, the demand is occasional but till today there is no problem for marketing.



- **Perception of others in the village:** After looking at the success of Mr Thungdemo the other youth and farmers were coming forward to take up floriculture as an enterprise in the villages. Time and now, he shows that even man can take flower cultivation as a profession in spite of being largely a female dominated enterprise.
- **Conclusion:** He has been a role model to many flower growers in the district. Now, he has already employed 5 nos. of youth in his farm to engage them in cut flower and organic tomato production

3.10. Poultry Production, Wokha

- **Introduction:** Mrs Areni Shitiri studied up to class 12; she got in touch with livestock's from a very young age, since her father was a veterinary field assistant in the state department. Being married in a very young age, she couldn't complete her studies. She and her husband is unemployed so, they started a small veterinary pharmacy in Wokha town with the help of her father. Then in 2015, they purchase a small stock of poultry and started rearing under backyard system. Both newly married, their only source of income comes from selling of poultry and some profit from the pharmacy. After the implementation of the project she has been earning around ₹11,500 monthly



from poultry farming alone

- **KVK Intervention:** In the mid-year of 2017, both of them were trained in scientific poultry farming under Attracting and Retaining Youth in Agriculture (ARYA) project. They were included in the 2nd batch to start a poultry unit.
- **Input/ Support provided:** After necessary training, some inputs were provide

Sl. No.	Input provided under ARYA project	Amount (₹)
1	Construction materials for low cost poultry housing (900 ft ² size).	₹25,000
2	Vanaraja chicks 500 nos.	₹15,000 (₹30/chick)
3	Feeds (200kg)	₹5,800 (₹29/kg)
4	Miscellaneous (Medicines, vaccine, mineral mix. etc.)	₹5000
Total		₹55,800

- **Progress made:** Mrs Areni established a poultry farm initially with a capacity of 500 dual purpose vanaraja poultry birds in the year 2017 under ARYA project. It was found that vanaraja birds were performed very well in terms of meat and egg production. Body weight gain of birds was 2-3 kg at the age of 2-4 months. The birds were started laying eggs at the age of 5-6 months and produced 130-160 nos. of eggs annually.
- **Benefit to youth:** During 2018, she generated an income of Rs 2, 40,000 from selling of 800 kg of live adult bird @ Rs. 300/ kg, Rs 13,500 from 45 sets of egg @ Rs 300/ set and Rs 3,000 from farm manure and gunny bag. Then in 2019-2020, she increased her stock which enabled her to earn more income i.e., Rs. 2,85,000 from selling of 950 kg of live adult bird and Rs. 9,000 from selling of 30 sets of eggs @ Rs 300/ set. Her income from farm manure and gunny bag was also increased to Rs. 5,550.
- **Market Linkage:** She has a direct linkage with the Theological college in Vankhosung where the college authority buys live adult chick and eggs in bulk from her every week for the college students.
- **Perception of others in the village:** Due to its resemblance with the local hen, and its ability to be reared under backyard farming, people have started to take more interest in the vanaraja breed of poultry.
- **Conclusion:** Poultry has generated employment opportunity for round the year. Horizontal expansion of poultry farming is also witnessed within and outside the villages.

3.11. Piggery Production, Wokha

- **Introduction:** Mr. Nchumbemo Ezung has studied up to class 12th standard, being from a lower income family where his parents were both engaged in agricultural activities alone, it was very difficult for him to go for higher education. So he had to sacrifice his own education in order to source his younger siblings to go for their higher studies. He started rearing few poultry and some local pigs, through which he earn some little money after the end of each year, which he used to invest for his younger siblings education. Without any scientific skill training, he has been in animal rearing sector for almost 4 years now.
- **KVK Intervention:** In the year 2016, he attended an awareness programme on Attracting and Retaining Youth in Agriculture (ARYA) project, and then he got in touch with KVK, Wokha. Seeing his enthusiasm on rearing on Pig, he was selected to undergo for the first batch training on Entrepreneurial and skill development on Scientific pig rearing where housing, management, feeding, vaccination etc. was taught. Altogether, 20 nos. of rural youth was trained in the first batch under ARYA project. His monthly income has changed from zero to ₹12,600 after the implementation of the project.
- **Input/ Support provided:** After the skill training was completed, site selection was done and necessary input was provided for construction of pig sty on 28th of January, 2017.

Sl. No.	Input provided under ARYA project	Amount (₹)
1	Construction Materials for Low cost pig Sty (5 chambers of 6/6 ft each chamber)	₹30,000
2	Hampshire Cross Piglets 5 nos. (4 female+1male)	₹27,500 (₹5,500/piglet)
3	Feeds (500kg)	₹14,500(29/kg)
4	Miscellaneous (Medicines, vaccine, mineral mix. Etc.)	₹5000
Total		₹77,000

- **Progress made:** Under ARYA project a pig breeding unit of 1 male and 4 female of Hampshire crossbreed pigs for production of quality Hampshire piglets was established in 2017. After one year of rearing all 4 female pigs gave birth of 6-9 nos of piglets with a mortality rate of 4%.
- **Benefit to youth:** During the year 2017-18, he sold 50 nos. of piglets @ Rs. 3,500 earning Rs. 1, 75, 000. He also got Rs. 37,500 from boar servicing @ Rs. 1,500 per service. In 2018, he had increased the parent stock up to 10 nos.

During 2019-20, he could able to sell 85 nos. of piglets fetching Rs. 2, 97, 500 and Rs. 45,000 from boar servicing. Sale of manure and gunny was the additional source of income, where he generated Rs. 18,000.




- **Market Linkage:** Selling of piglets is not a problem but availability of good quality breed is a huge drawback in the Wokha district. People usually get the information regarding availability of piglets from friends and neighbour. They come directly to the pig farm for purchasing of piglets. Farm yard manure and gunny bags are in huge demand by the flower grower in the district. Some of his clients are youth involved in cut flower enterprise under ARYA project.
- **Perception of others in the village:** The worthy work of Mr Ezung has opened the eyes of many rural youth and coming up to take pig farming as a vocation.
- **Conclusion:** The implementation of ARYA project on piggery farming has completely changed the life of Mr. Nchumbemo Ezung. In two years, he sold as many as 135 nos. of piglets. This year he recorded the highest number of piglets (17 nos.) born from a single mother pig. He has already expanded his pig farming from 5 nos. to 15 nos. of parent pig stock.

3.12. Poultry Production, Wokha

- **Introduction:** Mrs Achumlo Erui is 10th passed unemployed youth from Vankhosung, Wokha village. Since 2015, she was involve in Self Help Group (SHG) activities, they were practicing cultivation of agriculture and rearing of poultry and piggery for the past 2 years, but due to limited technical knowledge, they couldn't generated sufficient income as expected. In the year 2017, she stops taking part from SHG activities and instead started rearing poultry and piggery in backyard system by herself. Being unemployed, her only source of income are from poultry and piggery farming.

- KVK Intervention:** In the year 2016, she was imparted skill training on scientific poultry farming (housing, feeding and health care management). She was included in the first batch of poultry enterprise under ARYA project. Due to her past experience on backyard rearing of poultry she was selected to rear a dual purpose breed Vanaraja birds under low cost scientific housing system. Her monthly income is ₹11,800 from the poultry farming after 2 years of its establishment.
 
- Input/ Support provided:** After necessary training, some inputs were provided to her on 28th of January 2017.

Sl. No.	Input provided under ARYA project	Amount (₹)
1	Construction Materials for Low cost poultry housing (900 ft ² size).	₹25,000
2	Vanaraja chicks 9500 nos.	₹15,000 (₹30/chick)
3	Feeds (200kg)	₹5,800
4	Miscellaneous (Medicines, vaccine, mineral mix. etc.)	₹5000
Total		₹50,800

- Progress made:** Miss Achumlo started poultry farming with 500 nos. of vanaraja chicks under ARYA project in 2017. She utilised the poultry farming for meat and egg purpose. She used to sell whole birds when they attained 2-3 kg body weight at 4-5 months of age. She also reared some birds for egg production.
 
- Benefit to youth:** During 2017 to 18 her income was Rs 4, 20, 000 from selling of live birds and Rs. 15,000 from 50 sets of egg. Then in the following year, her income from selling of live adult bird has gone up to Rs. 5, 10,000 and also Rs. 24,000 from selling of eggs.

- **Perception of others in the village:** Seeing the success of Mrs Erui the farmers of the village motivated for taking up of poultry enterprise.
- **Conclusion:** The scientific knowledge and critical inputs that she gained from ARYA project has benefited and empowered her to be a self dependent women and a great example in her society. She has been playing as a role model to many of the women to undergo for poultry farming. Her monthly income has increased from Rs 3500 to Rs 9918 within last two years.

3.13. Mushroom Production, Wokha

- **Introduction:** Mrs Chonbeni studied till up to standard 11th due to financial problems. Then took up agriculture in a very young age, helping her parents out in the field to earn some income by selling of vegetables. In the year 2017, with some of her friends, they form a Self Help Group and started attending training program organised by the agriculture department. They have been earning some few incomes by engaging in a ginger cultivation.
- **KVK Intervention:** Through Agri. Dept., they came to know about KVK, Wokha. Seeing their past work and experience, they were train for Mushroom production under ARYA project.
- **Input/ Support provided:** Some inputs were supplied to them after the completion of the training programme

Sl. No.	Input provided under ARYA project	Amount (₹)
1	Construction Materials for Low cost Mushroom housing (450 ft ² size).	₹20,000
2	Mushroom spawn- 600 nos.	₹15,000 (₹25/spawn)
3	Others (Sprayer, plastic bag, syntax, poly bag etc.)	₹20,000
Total		₹55,000

- **Progress made:** Under the ARYA project she had established a mushroom unit of 300-400 bags capacity per batch in the year 2017-18. Her main problem was finding a good quality spawn in the remote village. But after her inclusion in mushroom production unit under the project, she was introduced to a seller who supplied good quality mushroom spawn. Now she is producing 600-800 kg mushroom annually.

- **Benefit to youth:** In the first year (2017-18), she harvested around 600 kg of mushroom from 3 harvests which she sold @ Rs. 180/ kg earning Rs. 1, 08,000. Then in the following year her harvest was increased from 600 to 800 kg earning Rs. 1, 44, 000 annually.
- **Market Linkage:** Marketing of oyster mushroom is not a problem for the cultivator. They usually sell the produce to the consumer directly as there is high in demand. They have a good market linkage for mushroom. They sell their produce through village sale in the village marketing shed and also to the village trader at a wholesale price
- **Perception of others in the village:** Due to its easy management, delicacy and cheapness people in her locality has started to take up mushroom farming as a secondary occupation where some time she is called to train them.
- **Conclusion:** Mrs Chonbeni is earning more than Rs 6,840 per month from mushroom farming besides involving in other non-farm activities. This year she has up-scaled her mushroom unit to the capacity of 800 mushroom bags so that income per month could be raised more than Rs 10,000.

3.14. Mushroom cultivation, Dhalai

- **Introduction:** For entrepreneurship development on mushroom production 30(thirty) nos. were trained with appropriate knowledge and skills related to Mushroom cultivation..
- **Progress Made:** Till dated out of 30 youths trained 15 (fifteen) youth established the enterprise with support from the project during the year 2019-20. From the project fund low cost mushroom house was constructed which also involved 50 percent youth contribution. Each production unit consist of 250 packets of mushroom in the first cycle from the project fund. Subsequent packets were set up by the youths from the earning generated from the project.
- **Benefit to Youth:** Each youth were producing around 280 kg of fresh mushroom from one unit which were sold in the local market @ Rs. 200/- per kg thus giving them an opportunity to earn around Rs. 56000/- with in a period of 4-5 months.
- **Perception of others in the village:** By seeing the project activities other youths in the village as well as surrounding



village are much motivated to take the activity. Efforts were taken up from the KVK for covering more youth in the current years.

- **Conclusion:** Small enterprise like mushroom production, vermi-composting is very easy to establish. Youth with minimum training can establish the units which will fetch them a good return. Till dated the project got good appreciation from the public representatives and more youths are getting attracted towards the project activity.

3.15. Mushroom Production, Jaintia Hills

- **Introduction :** For developing entrepreneurship, **25 youths** were trained with appropriate knowledge and skills related to oyster mushroom production. **5 youths** established the enterprise in the year 2019-20. The youth possessed a 10 *12ft mushroom house on an average.
- **Progress Made :** The enterprise has shown promising results and is expected to advance towards a major entrepreneurial mode which has provided a major subsidiary income.
 - i. From one unit, an amount of Rs. 72000/- per year has been earned throughout the year 2019-20 since September 2019.
 - ii. The youths have shown immense interest and have sought for more assistance on the processing of the mushroom for higher economic gains.
 - iii. Some youths and farmers in the village have developed interest and started to try it out on their own for the production of oyster mushroom through the adopted youths.
 - iv. The product has been locally marketed at Jowai and Ummulong and sold at a price of Rs. 200/kg.
- **Benefit to Youth:** From each mushroom bag, **2 kg** of fresh oyster mushroom worth of **Rs. 200/kg** was produced in a batch of **60 bags** totally producing **120 kgs/batch**. Thus, a youth earned Rs. **72000/- from 3 batches** since September 2019. The product is yet to be branded and the branding procedures has already been initiated and the process is to be completed as soon as the lockdown period due to the existing pandemic has been called off. The product is presently marketed in the local Ummulong and Jowai Market.



- **Perception of others in the village:**
 - i. The farmers in and around the village are impressed and receptive towards the technology. Through such enterprises, farmers and youths can ensure a subsidiary source of income.
 - ii. The farmers and rural youths in the village can now understand about the optimization of natural resources.

- **Conclusion:**

The enterprise has helped a lot to the youths who benefitted through the project. It has also helped a lot for the farmer to earn a subsidiary income from such enterprises. It is expected that processing of mushroom will be taken up in the near future for ensuring better marketing opportunities.



3.16. Vermicomposting unit, Jaintia Hills

- **Introduction :** A Skilled Training Programme was conducted in the year 2019-20 for **25 number** of rural youth on Vermicomposting, Vermiwash, Vermiculture and other composting method. There are **5 Vermicompost units** where in each of the vermicompost unit there are **5 vermi pits/ tanks**. The vermicompost produced in a year from all unit was 19200 kg with a selling price of Rs 30/kg.

- **Progress Made**

- i. A net profit of Rs 25,200 was benefitted from each group.
- ii. The marketing of the compost is under progress and the brand name for product is yet to be given
- iii. Seeing the progress of the ARYA youths, more number of rural youths are taking up this enterprise as a means for generating additional income
- iv. The youths not only earn money, but also aid society by providing excellent quality organic manure for sustainable agro-practices.



- **Benefit to Youth :** In each unit the youth could earn **Rs 62,600** from vermicompost, vermiwash and earthworms. Thus the total value from all the products in all the 5 units is Rs 6,26,000. The products were marketed in the local market at Ummulong village and Jowai . However the product was yet to be given a brand name.
- **Perception of others in the village:**
 - i. The production of vermicompost is economically viable in the district and has greater opportunity to expand the enterprise since the raw materials are available in bulk quantity at reasonable price
 - ii. ARYA youths are not only getting more income but also getting employed in vermicomposting operation.

- **Conclusion:**

Large-scale production of vermicompost has the potential to replace chemical fertilizers. Protein rich ‘earthworms’ could be a good business opportunity with awareness growing about the use of these products in agriculture and other allied industries. Vermiculture can also enhance the livelihood as well as generate self-employment opportunities for the unemployed youths.



Since the inception of the project, a growing number of youths are taking interest in the production of vermicompost utilizing earthworm activity. ARYA youths have become more innovative and talented and could be successful entrepreneurs in vermicompost production and accruing profits which would enhance their life style and income. To create the demand of vermicompost there is a need to create awareness among the rural youths about the availability inputs in villages, which will be helpful for the producer to increase the production.

3.17. Walk in tunnel for off season vegetable production, Jaintia Hills

- **Introduction :** For developing entrepreneurship, **25** youths were trained with appropriate knowledge and skills related to Walk in tunnel for off season vegetable production. Five youths established the enterprise during February 2020. Each youth possessed **4 tunnels per unit** and the size of each tunnel

is 15m x 2m x 1.5 m. The objective is to produce year round vegetables and obtaining higher profitability by growing off season vegetables. The crop rotation followed is Tomato- Capsicum- Cucumber.




- **Progress Made:**__Tomato crop is grown at a close spacing of 45x45cm accommodating 120 plants per tunnel. The crop is in vegetative stage.
- **Benefit to Youth:**The cost incurred in construction of the walk in tunnel along with production of the tomato crop is Rs.59,140. So far no returns are achieved because the crop is in production stage.
- **Perception of others in the village:** The Walk in tunnel is the first of its kind protected cultivation structure constructed in the district, so it has harbour great curiosity among the farmers and they are coming forward and enquiring about the durability and suitability of the structure in the region.
- **Conclusion:** With the construction of this type of protected cultivation structure, it is expected to produce good and higher yield crops even in adverse cold and frost conditions in the months of December- February.



3.18. Poultry production, Jaintia Hills

- **Introduction :** For developing entrepreneurship, **25 (number) youths** were trained with appropriate knowledge and skills related to poultry production. **5 (number)** youth established the enterprise in the year 2019-20. Every youth possessed **200 (number)** poultry birds on an average.
- **Progress Made**
 - i. Poultry enterprise is leading the way in terms of income generated with a net profit of Rs. 1, 35,750 from each group.
 - ii. The eggs produced by the youths are marketed under the brand name “Farm Eggs”

- iii. A total of 6 numbers of youths got attracted to this enterprise from the nearby villages
- iv. A success story has been published at Caritas India website regarding 1 youth who got attracted to this enterprise and is now a regular supplier of Vanaraja and Broiler chicks in the district. In just a span of 1 month she earned a net income of Rs. 25000 which prompted her to take up poultry farming at a larger scale.
 
- v. With the increasing demand of poultry meat and eggs and seeing the progress of the ARYA youths, more number of youths are taking up poultry farming in a larger scale
- vi. Poultry hatcheries will be procured in the coming days in order to meet the heavy demand of chicks especially the improved varieties like *Vanaraja*, *Srinidhi* and *Gramapriya*.
- vii. Stalls will be set up very soon for marketing the products of ARYA youths
- viii. More number of villages are expected to be covered under this project.
 - **Benefit to Youth :** From each unit, 367 kg meat and 14,400 eggs worth of Rs. 2,35,750 was produced annually. Thus, a youth earned Rs 45, 250 annually. The products are marketed in the local markets like Ummulong and Jowai. The youth group are in the process of marketing the eggs with the brand name “FARM EGGS” after proper packaging.
 - **Perception of others in the village:**
 - i. Being an agrarian state and almost 90% of the population being non-vegetarian poultry farming is one of the most acceptable enterprise both in the State in general particularly in West Jaintia hills district
 - ii. Looking into the progress of the ARYA youths, many youths have come up in seek of technical support from KVK Jaintia Hills. Most of them have already started taking up this enterprise from their own expense as a main source of income generation



- iii. Many youths have now come up as suppliers of chicks and eggs to the fellow youths within and outside of their villages.
- iv. Since the inception of this project, there has been a gradual increase in numbers of poultry farmers in the district which is clearly visible with the regular in flow of chicks from the neighbouring districts like Ri-Bhoi.



- **Conclusion:** The project showed a promising result in just 1 year of its inception. More number of youths are expected to get attracted towards this project particularly poultry production which is one of the leading enterprise globally. As the project is in its second year of inception in West Jaintia Hills district, the outcome predictable in the coming years is expected to be massive. With the present era of pandemic due to COVID-19, the rate of unemployment is expected to increase in the coming years. Poultry farming will surely be one of the best option for most of the migrated youths in search of a jobs.

PART-4**Budget Provision****EXPENDITURE STATEMENT IN r/o ARYA PROJECT FOR 3 YEARS (2015-16 to 2017-18)****Table- 8: Budget provision of ARYA Project in KVKs and ICAR-ATARI, Umiam during 2015-16 to 2017-18**

Sl. No.	Name of Host/KVKs	2015-16			2016-17			2017-18		
		Allocation	Fund Released	Expenditure	Allocation	Fund Released	Expenditure	Allocation	Fund Released	(Rs. In Lakhs) Expenditure
1	ICAR-ATARI, Barapani	1.00000	1.00000	1.00000	13.00000	13.00000	13.00000	2.95817	2.95817	2.95817
2	KVK Senapati, Manipur	8.00000	8.00000	8.00000	24.00000	24.00000	24.00000	5.18000	5.18000	5.18000
3	KVK Lunglei, Mizoram	8.00000	8.00000	8.00000	23.50000	23.50000	23.50000	5.18000	5.18000	5.18000
4	KVK Wokha, Nagaland	9.00000	9.00000	9.00000	23.00000	23.00000	23.00000	4.00000	4.00000	4.00000
	TOTAL	26.00000	26.00000	26.00000	83.50000	83.50000	83.50000	17.31817	17.31817	17.31817

Table-9: Budget provision of ARYA Project in KVKs and ICAR-ATARI, Umiam during 2018-19 and 2019-20**(Rs. In lakh)**

Sl. No.	Name of Host/KVKs	2018-19			2019-20		
		Budget Allocation	Fund Released	Expenditure	Budget Allocation	Fund Released	Expenditure
A.	ICAR-ATARI, Barapani	25.28230	25.28230	25.28230	9.71625	9.71625	9.51622
B.	Old KVKs						
1	KVK Senapati, Manipur	31.25000	31.24953	31.24953	14.95000	14.95000	14.95000
2	KVK Lunglei, Mizoram	31.25000	31.25000	31.25000	14.95000	14.95000	14.95000
3	KVK Wokha, Nagaland	37.75000	37.75000	37.75000	14.93000	14.93000	14.93000
C.	New KVKs						
4	KVK Jaintia Hills, Meghalaya	6.84000	6.84000	6.84000	18.88000	18.88000	18.88000
5	KVK Tuensang, Nagaland	6.84000	6.84000	6.84000	18.88000	18.88000	18.88000
6	KVK Dhalai, Tripura	6.84000	6.84000	6.84000	18.88000	18.88000	18.88000
	Total (A+B+C)	146.05230	146.05183	146.05183	111.18625	111.18625	111.18625

