

Promotion of Agro based Interventions for Sustainable Livelihood in Nagaland through Tribal Sub Plan

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Preface

The agricultural scenario in Northeast India is characterized by different land use patterns and is in a transition phase due to change in climate and increasing food requirement. Settled cultivation is the main features of today's agriculture in India. In contrast to this, shifting cultivation is still practiced in larger areas of Nagaland. It is sustainable when the cropping period is not too long and the fallow period is long enough. This is however, no longer possible today because of the growing population and shrinking forest population. Insights into the agricultural scenario of Nagaland suggest that improvement of *jhum* cultivation with suitable modification may elevate the present subsistence level agriculture into sustainable agriculture.

Considering the above facts, a number of activities were initiated under Tribal sub plan (TSP) during the year 2011-12 to increase the farm income of the resource poor farmers of Nagaland, with the aim of improving the livelihood of scheduled tribes (ST) based on sustainable agricultural production system. Various developmental activities under TSP have been continued thereafter in the subsequent years in regular manner. The major initiatives under TSP have been carried out with the primary objectives to promote the advanced technologies for augmenting crop and livestock productivity for enhancing the quality of life of primitive ethnic groups through technology demonstration, hands on training for capacity development and distribution of critical inputs etc based on needs.

This publication highlights the work executed in agriculture and allied sectors under TSP in Nagaland during 2011-15 including few success stories. The authors duly acknowledge the efforts taken by Programme Coordinators, SMSs, Technical Assistants of KVKs under ICAR Complex, Nagaland Centre, technical and support staffs of the centre as well as ICAR Complex HQ at Umiam for helping the scientists in executing the activities at different locations of Nagaland. The authors also acknowledge the services rendered by the Nodal Officer, TSP and the Director, ICAR Research Complex for NEH Region for providing the financial assistance to bring out this publication in present form.

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1. Present scenario of agriculture in Nagaland

Nagaland, the 16th State of Indian Union having geographical area of 16,579 Km², is bounded by Myanmar on the East, Arunachal Pradesh on the North, Assam on the West and Manipur on the South. It lies between the parallels of 98° and 96° (E) Longitude and 26.6° and 27.4° Latitude (N) of the equator. It has 11 districts, 52 blocks covering a total of 1,286 villages. Total population of Nagaland is 19.54 lakhs, of which 83 per cent lives in rural areas. About 10 per cent of rural population is below the poverty line; among the people living in urban areas 4.3% of them are below the poverty line.

Agriculture is the key occupation of the people that accounts 23.35 per cent of the total state domestic products and 70 per cent of the total work force. The major agricultural system of the state is shifting cultivation locally known as *Jhum*. Agriculture and allied sector have achieved a growth of 4.1% and contributed 24.73% to the Gross State Domestic Products (GSDP). Out of this, agriculture alone contributed 19.29% to GSDP. The total food grains production in the state which stood at 5,98,960 MT in 2012-13 increased to 6,25,280 MT in 2013-14, showing an annual growth of 4.38%. Production of oilseeds and commercial crops also increased by 0.58% and 1.17%, respectively during the same period. As there is a gap in demand and supply in the state, a vision has been made to make the State self sufficient in food grains and oilseeds by 2025.

The fruits grown in the state range from tropical and sub-tropical fruits like banana, papaya, pineapple and citrus to temperate fruits like apple, pear, peach, plum, strawberry and even certain nut fruits. The major vegetables grown in the region are cabbage, cauliflower, tomato, *knol-khol*, radish, carrot, French bean and cucurbitaceous crop. The total area under horticultural crops (fruits & vegetables) in the state is around 94.2 thousand ha, which is around 2.59% of the total geographical area of the state and it gives a total production of 926.3 thousand tonnes with a productivity of 10.95 t/ha. The area under fruits has been increased from 13.6 thousand hectares in 1996-97 to 40.6 thousand ha in 2013-14 with a production of 168.9 and 411 thousand tonnes, respectively. In vegetable crops, the maximum area of about 1350 ha is under cabbage followed by tomato that occupies 680 ha. Besides, vegetables like French bean, carrot, cauliflower, cucurbits and leafy vegetables are also grown.

Livestock component plays an integral role in tribal livelihood of the state. The majority of population is non-vegetarian in their food habit. The state possesses 0.91 million of total livestock and 2.18 million of poultry population. Among the livestock component, cattle population comprises of 25.78% and pig 55.28%, besides buffalo, goat and mithun being reared for meat purpose in isolated pocket of the state. The numbers of pigs available per 1000 household is about 181 (Livestock census 2012, Department of Animal Husbandry, Dairying and Fisheries, GOI). The distribution of total pig population is mostly located at rural areas (86.1%).

2. Glimpse of Tribal Sub Plan

The scheme under TSP aims at improving the livelihood of scheduled tribes (ST) based on sustainable agricultural production system. Initiatives under TSP have been carried out with the following major objectives:

- To promote advanced technologies for augmenting crop and livestock productivity for enhancing the quality of life of primitive tribal groups.
- To refine the existing traditional knowldges and practices adopted in agriculture and allied sector.
- To explore and promote alternative agro-based employment potential wherever the present occupation is dwindling.
- To introduce need base and site specific equipments and machinery for drudgery reduction, value addition and processing of farm produces.
- Capacity building of tribal populations through awareness campaign, training, demonstration of improved agricultural practices.

Priority areas

- Initiation of location specific livelihood program through introduction of improved crop varieties, livestock breed, suitable package of practices for agri and allied sectors.
- Effective and sustainable utilization of available natural resources through soil, water and nutrient management, and integrated bio-resource flow.
- Development, demonstration and dissemination of suitable farming system model
- Value addition and processing of farm produces based on improved technologies
- Sensitizing activists of village level workers, NGOs, KVK fuctionaries and state machinaries for tribal development through short-term intensive workshops or long term training courses.
- Awareness generation in rural youth to alternate technology option for entrepreneurship development through various workshop, seminar, publication etc.

Under TSP Scheme, location specific and need-based projects were supported for socio-economic upliftment of tribal communities. Some details of these projects are given below:

- Production of high yielding seeds of major field crops (rice, maize, toria, linseed, soybean) in participatory mode to meet up the demand of quality seeds in the state.
- Introduction of improved livestock breeds of cattle (Jersey), pig (Large Black Cross, Hampshire, and Ghungroo), rabbit (New Zealand White, Soviet Chinchilla), poultry (Vanaraja, Gramapriya, and Srinidhi), Duck (Cherra Chambli) for augmenting the production of meat, milk and eggs in the region.
- Popularization of scientific method of cultivation/rearing practices for optimum production and monetary returns
- Promotion of soil, water and nutrient management through improved technologies like organic farming, vermicomposting, *jalkund*, rain water harvesting, mulching, Himalayan alder based *jhum* farming etc.
- Adoption of intensive integrated farming systems viz., agri-horti-livestock-fish, agri-horti-silvi-pastoral, horti-livestock-fish for efficient bio-resource flow, round the year income and employment generation.
- Sponsoring rural youth in developing the value added product (jam, jelly, morabba, pickles, squash) from fruits and vegetables, mushroom production, homescale production of handicrafts from agri-byproducts etc.
- Production of spawn/fish fingerlings through customized eco-hatchery to meet up the demand of quality fish seed.

3. Initiative in participatory seed production of cereals and oilseeds

Quality seed is the key input for realizing the potential productivity of the crops. As quality deteriorates old seed must be replaced with fresh lots of quality seeds. It is necessary to increase the availability of quality seeds to raise the seed replacement rate (SRR). There is a huge gap between total requirement and production of seeds in the country and Nagaland is not exception to that. Based on the area covered during 2010-11, the seed requirement for the state was about 8000 MT of paddy, 1700 MT of maize and 135 MT of toria per year. As of now, there are no seed production practices in place to produce sufficient quantity of its own except the seed farms located at Merapani and Tizit, which produce few metric tons of paddy seeds. This has resulted in out flow of huge sum of revenue to import substantial amount of seeds from outside the state. Moreover, seeds that are often procured and distributed are not of the varieties best suited in a given situation and many a times, seeds are found to be of sub-standard quality. Hence, the systematic seed production through participatory approach in a convergence mode has to be considered on foremost priority for sustainable agriculture development in the state.

Seed production program under TSP

Under TSP program, ICAR Nagaland Centre, Jharnapani had initiated seed production for truthfully labelled seeds of the major field crops like paddy, maize, soybean, linseed, toria etc. In 2011-14 the ICAR Nagaland Centre produced about 97 q paddy, 47 q maize, 5.5 q toria, 6.0 q linseed and 1.5 q soybean. The seeds were graded as truthfully labeled seed and distributed to the progressive farmers for multiplication in participatory mode.

Seed production of field crops at ICAR, Nagaland Centre

Crop/Variety	Year	Production (q)
Maize (var. RCM-75* and RCM-76)	2011-12	16.50
Maize (var. DA 61 A*, RCM-76)	2012-13	13.50
Maize (RCM-76)	2013-14	10.00
Maize (RCM-76)	2014-15	7.00
Paddy (Ranjit, RCM-11, Bhalum-3, Shahsrang-1)	2012-13	30.00
Paddy (Ranjit, RCM-9, Shahsrang-1)	2013-14	35.00
Paddy (Ranjit, RCM-9, Shahsrang-1)	2014-15	32.00
Soybean (var. JS -335)	2011-12	1.00
Soybean (var. JS -335)	2012-13	1.50
Linseed (Neelum, Sweta, Parvati)	2011-12	2.50
Linseed (Neelum, Sweta, Parvati)	2012-13	2.00
Linseed (Neelum, Sweta, Parvati)	2013-14	1.50
Toria (Var. TS- 36, 38, 67)	2012-13	3.00
Toria (Var. TS- 36, 38, 67)	2013-14	2.50

*Participatory seed production at Bade, Dimapur

During 2011-13, a total of 8 trainings cum seed distribution programmes were organized. All together 970 beneficiaries were promoted for maize cultivation and furrow lime application. Further, two stakeholder workshops on seed production were conducted in Mokokchung and Kohima during 2013 to prepare a roadmap for quality seed production in participatory approach involving State Agriculture Department, KVKs, NGOs and ICAR Nagaland Centre.

Paddy seed production was initiated during the year 2013 for upland paddy varieties (Bhalum 3 and Bhalum 4) in 0.7 ha areas at Longsachung and Koio village. The yield of Bhalum 3 and Bhalum 4 was recorded as 23 and 21.5 q/ha, respectively. The seeds of upland paddy were distributed to the fellow farmers for horizontal multiplication and adoption in wider scale in Wokha district. Similarly, maize seed production for RCM-76 during *Kharif* was also started by adopting two self help groups (SHGs) in Yanha village (Cherry SHG and Nzan SHG). Initially, 100 kg of maize seeds were distributed to these groups for covering an area of five hectare. The average yield of maize was recorded as 31q/ha. The seeds were purchased in bye-back system from the farmers and further distributed to the other SHGs in the neighbouring villages.



Rice (RCM-11) and Maize (RCM-76) seed production



Packaged maize seeds for distribution

Packaged paddy seed

4. Augmenting livestock productivity through popularization of improved germplasm

Nagaland, one of the hilly states of Eastern Himalaya, is inhabited by tribal communities which are mostly non-vegetarian and hence, the demand of animal protein is much more compared to other parts of the country. Pig, poultry, goat, cattle, mithun and rabbit are popularly maintained for production of meat, poultry for meat and egg purpose in majority of household in the State. However, the low input small scale livestock production system with indigenous variety in traditional system could not produce enough meat, milk and egg to meet the nutritional requirement. Non-availability of quality germplasm and critical inputs like feeds, medicines, vaccines and lack of awareness are major stumbling block in development of livestock sector in the state. Under TSP program several initiatives had been taken to introduce quality germplasm with low cost housing structures for demonstration and capacity building so as to improve the management practices for promotion of pig, poultry, duck, rabbit, dairy etc.

Major interventions

Formation of Nagaland Pig Farmers' Association in Nagaland: Aiming the self sufficiency in pork production by 2020 in the state, a group of like minded progressive farmers formed an association called Nagaland Pig Farmers' Association (NPFA) in August 2013 with the active support of ICAR Nagaland centre. Memorandum of understanding was signed by the ICAR Nagaland Centre with NPFA to extend technical support in establishment of pig breeding unit, introduction of artificial insemination and meeting the requirement of feed ingredients for pig farming in the state. All together 60 progressive farmers (Stocking size of more than 40 adult animals) were actively associated with NPFA and undertook the training and demonstration for promotion of pig based farming system. Four on farm/off campus training program were conducted at Dimapur and Mokokchung and 75 piglets and 03 quintals of high yielding maize seeds (RCM -76) were also distributed to the members during the year 2013-14. Further, a state level progressive pig farmers' meet was organized in collaboration with NPFA during April 23-24, 2014 at Dimapur where Mr. T.R. Zeliang, Chief Minister, Nagaland graced the occasion as chief guest and Dr. D.K. Sharma, Director, NRC on Pig as guest of honour.

Establishment of pig breeding unit: The demand of quality piglet at the farmers' field is enormous as there is no organized pig farm available to cater the need of superior germplasm. ICAR Nagaland Centre has introduced quality germplasm through Mega Seed Project on Pig. To propagate the germplasm produced at institute level a numbers of pig breeding units have been established in participatory mode at farmers' field in all the districts of Nagaland. The farmers were given hands on training on scientific piggery farming along with quality breeds for establishment of breeding unit having the strength of 4 to 10 numbers of piglets of Ghungroo, Hampshire cross and Large Black cross. The performance of the breeding unit has been evaluated and documented.

Establishment of Pig Breeding Units at Dimapur: Under TSP program during the year 2014-15, total five pig breeding units were established at different villages in Dimapur district with an aim to produce quality piglets so as to make them available at affordable cost to the farmers. Altogether 23 Hampshire and Ghungroo cross piglets of two months old as indicated below, were distributed to the beneficiaries after giving trainings on production and management.



Pig breeding unit at Bade village, Dimapur and Mezoma village, Kohima

Name and address of the farmer	No. of Piglets	Sex ratio (M:F)	Performance
N.T.Kokon, MD, Wondangki Charitable Foundation	2	1:1	Survivability % = 100, Avg. Body weight = 87 kg/pig. Net income= 9000/-
Samuel Rengma, Check Post, Chumukedima	4	1:3	Survivability % =100, Avg. Body weight = 60 kg/pig
ShivitoKinimi, Toluvi village	5	1:4	Mortality = 1, Avg. Body weight = 70 kg/pig. Breeding done.
Asabu Zhasa, New Chumukidema	8	2:6	Survivability % =100, Avg. Body weight = 78 kg/pig
David, Pherima Village	4	1:3	Survivability %=100. Avg. Body weight = 22 kg/piglet

Small Scale pig breeding units at Longleng: Four numbers of small scale pig sty were constructed at Hukphang, Shayaung ward, Pongching and Pongo village. Altogether sixteen piglets of Large Black cross (12:4) were provided to the beneficiaries viz., Shri Ngamnu Phom, Hatam Phom, Wannau and Nokpo Phom. The farmers were given awareness training on scientific management of pig production prior to the supply of piglets. The financial assistance was extended to the beneficiaries for construction of low cost housing and concentrate feed.

Establishment of small scale pig breeding units at Wokha: Three small scale pig breeding units were established at Okotsu, New Wokha and Wokha villages during the year 2013-14. The financial support was given for construction of housing with locally available materials and total 15 piglets of Large Black cross were provided to the beneficiaries at 4:1 ratio. The average body weight of 35 kg was recorded at five months. The survivability rate up to six months was recorded as 85%.

Establishment of small scale piggery unit through SHGs: Small scale piggery units were established in a participatory mode through women SHGs of Dimapur, Zunheboto and Tuensang district of Nagaland during the year of 2014-15. Total 42 piglets as initial breeding stock and low cost housing structures were provided to seven SHGs group for establishing the demonstration units. The survivability was recorded more than 90% in all the units.



Asabu Zhasa, New Chumukidema and Shivito Kinimi, Toluvi village



Small Scale pig breeding units at Longleng



Performance of piggery at Medziphema, Dimapur

Demonstration of deep litter pig pen model at Dimapur: Low cost pig pen model with deep litter system was introduced at Kukidolong and Medziphema village, Dimapur district. In this system, pig pen is constructed with locally available bamboo and woods. Instead of concrete floor, paddy husk or saw dust was used as litter materials in both open and covered areas with thickness of about 2-3 ft. The litter materials absorb the urine, faeces produced by the animal and get decomposed

into good quality manure in 3-4 months. Replacement of fresh litter and regular turning is required. This method of rearing is effective during winter months where cleaning of pig shed often become difficult due to shortage of water. However, during monsoon season, additional care should be taken to manage the litter from getting excess moisture and problems of water borne diseases.



Demonstration of deep litter system

Promotion of Vanaraja and Gramapriya varieties for backyard Poultry farming: The demand of eggs and chicken meat is enormous in the state and there is no organized large scale broiler or layer farm set up till date. Further, the inputs for commercial poultry farming i.e., quality chicks, feeds and medicines are not available in most of the areas in Nagaland. Hence, to meet the demand of eggs and meat the people of Nagaland are highly dependent on rural poultry farming. In this perspective, Vanaraja and Gramapriya varieties, which thrive well on backyard condition and produce much better body weight and eggs than the local birds were popularized. Further, the multi coloured birds with brown eggs resembling to *deshi* birds fetches more price at rural areas in Nagaland.

Awareness cum mass distribution of poultry birds at Maova village, Dimapur: To introduce the improved variety of Vanaraja and Gramapriya birds in Maova village inhabited by Kuki tribes, awareness cum mass distribution of chicks was organized under TSP by KVK Dimapur in collaboration with SBI, Medziphema on September 8-9, 2014. Altogether 35 representative farmers from different colonies of Maova village participated in the training program, where they were exposed to general care and management of poultry birds. Later on, total 3300 numbers of Vanaraja and Gramapriya chicks were distributed.



Participants at chicks distribution and the Vanaraja birds at farmers field

Establishment of low cost poultry demonstration unit at Wokha: To promote backyard poultry production at Wokha district two villages namely Humtso and Okotsu were selected during the year of 2013-14. In one village semi-intensive backyard demonstration unit was constructed (200 birds' capacity) and in another village a group of fifteen farmers were provided with 225 chicks for initiating poultry farming under TSP. Altogether 425 chicks of 21 days old Vanaraja varieties were supplied during the month of December, 2013. The average body weight of Vanaraja birds at 5 months of age was recorded as 1.6 kg at Humtso village and 1.8 kg at Okotso village.



Distribution of Vanaraja birds at Okotsu village, Wokha

During the year of 2014-15, another 10 SHGs and few progressive farmers were selected to propagate the backyard poultry farming with improved Vanaraja birds at Wokha district. A total of 4000 day-old-chicks were distributed among the beneficiaries at Liphayan, Ralan, Yanpha, Okotsu, Humtso, and New Wokha villages of wokha district. Besides chicks, critical inputs like starter feeds and vaccines were supplied to the beneficiaries under TSP program.

Establishment of backyard poultry demonstration unit in different districts of Nagaland

Name and address of the farmer	Chicks (No.)	Performance/economic benefit
Anebou Kuotsu, Kukidolong Village, Dimapur	200	Net income= Rs. 18-22,000/-per batch; 4 th batch running with 80 birds
N. T. Kikon, MD, Wondangki Charitable Foundation, Dimapur	50	Net income= Rs. 450/-
Rose Mary, Chuphobozou town, Kohima	50	Net income = Rs. 600/-
Zapon Kiso, Punglwa village, Peren	100	Net income = Rs. 28,000/-Again purchased = 100 nos,Avg Body wt = 1.2 kg/bird
Lezore Pusa, Jharnapani, Village, Dimapur	100	Net income = 16,000/- . Purchased 50 nos. again
Samuel Rengma, Police Check Post, Chumukedima, Dimapur	200	Net income from sale of meat and egg = Rs. 28,000/-
Vevoyi , Khushiabill village, Dimapur	200	Net income = Rs. 15- 18,000/batch 12 th batch running
Chonben Ovung, Lingri village, Dimapur	150	Survivability 100 % . Avg. Body wt = 2 kg



Anebou Kuotsu, Kukidolong, Dimapur

Lezore Pusa, Jharnapani, Dimapur

Establishment of backyard poultry units at Jalukie, Peren: Many farmers of Jalukie region, Peren district faced extreme difficulty in 2014-15 due to draught like situation. The paddy crop fails due to late and insufficient monsoon during the cropping season. An initiative was taken up by ICAR Nagaland Centre under TSP to support the farmers through backyard poultry farming. In this connection, farmers club leaders from 9 (nine) villages came together, held a meeting and unanimously agreed to take up backyard poultry farming as an alternate means of their livelihood. To facilitate the farmers, KVK Dimapur organized four days on-campus training programme “Improving livelihood security through backyard poultry farming” during September 21-25, 2014 in collaboration with Development Association of Nagaland (DAN). Later on, 1800 numbers of poultry birds were distributed under TSP to nine farmers’ club on October 08, 2014 at Nkwareu village.

Establishment of backyard poultry demonstration unit in Peren district

Name and Address of the farmers	No. of Birds	Net Profit (Rs.)
Lumei, New Jalukie	200	35000
Luthuanliu, Nkworeu village	200	18000
Aring, Jalukie	200	16180
Ngimgwangle, Kejanglwa	200	43030
Kelungleuyile, Old Jalukie	200	14970
Peusi, Old Jalukie	200	8140
Namrai, Deukwaram	200	30000
Ngaudai, Dungi village	200	-81320*
Pwangzinliu, Lamhai village	200	22000

*Mortality of all birds due to electric short circuit in poultry unit

Distribution of poultry birds at Longleng: Longleng is one of the most backward districts in Nagaland. The availability of egg and chicken meat is scanty due to the remoteness and poor

accessibility. To popularize the backyard poultry farming with improved variety produced at ICAR Nagaland Centre, an 'Input Distribution Programme' was conducted by KVK Longleng under TSP on October 29, 2014. About 2000 chicks were distributed to 40 SHGs covering 400 members from Tamlu Town, Tamlu and Kanching village for large scale demonstration of backyard poultry farming in the Longleng district. The programme was very much successful in popularizing Vanaraja variety for livelihood improvement and enhancing the family income.



Establishment of backyard poultry units at Zunheboto: Initiative has been taken to introduce the improve Vanaraja variety at far flung Zunheboto district of Nagaland under TSP by adopting several SHGs. Thirty two women farmers from 13 SHGs of Rotomi and Atoizu villages of Zunheboto district of Nagaland participated in the three days long training programme, where in the participants were exposed about scientific management of poultry under semi-intensive system. Altogether 1400 chicks were supplied to establish 14 demonstration units in Rotomi and Atoizu village.



Performance of poultry birds at Zunheboto district of Nagaland

Promotion of pig based integrated farming system at Medziphema: The integration of pig, fish and agricultural component facilitate efficient use of on farm resources and thereby enhance

productivity and profitability of the overall farm. Pig –fish integrated farming system model was established at Medziphema village under TSP during the year 2014-15. The model consists of fish pond (1200 m² area), fruit block in one side of the bank and Low cost permanent pig sty in another bank along with agricultural land 0.3 ha area. Total five piglets of crossbred variety, 20 citrus sapling and 2000 fish fingerlings were supplied to the beneficiary.



IFS model developed at Medziphema, Dimapur

Promotion of rural economy through rabbit farming: Awareness programme on creation of rural economy through rabbit farming was jointly organized by ICAR RC for NEH Region, Nagaland Centre, Jharnapani and SASRD, Nagaland University, Medziphema on 6th March 2014. To introduce scientific rabbit farming, total 28 rabbits and low cost cage for housing were distributed to the beneficiaries in six villages of Kohima district. The farmers were also demonstrated the use of home scale chaff cutter for chopping the grasses, leaves and roots.



Rabbit unit in Mezoma village

Rabbit unit in Khonoma village

Demonstration of improved rabbitry management in Kohima

Village	Chaff cutter (Nos.)	Rabbit cage	Rabbits (Nos.)
Mezoma	3	1	10
Khonoma	-	1	4
Sendenyu	-	-	2
Peducha	-	-	2
Chiephobozou	-	1	6
Kohima	1	1	4

Establishment of Dairy Units: Dairy farming is not generally practiced by Naga households. However, after successful implementation of milk union at Dimapur (DIMUL) and Kohima (KOMUL) few unemployed youth has shown their interest on dairy farming. To promote dairy farming two dairy demonstration units were established at Molvom and Tir village during the year 2014-15. Altogether, 09 Jersey cross cows were provided to the beneficiaries for initiation of dairy unit.



Dairy demonstration unit at Molvom village

Dairy demonstration unit at Tir village

Establishment of duck cum fish farming system: During 2013-14, five units of integrated duck cum fish farming system were established at Yanpha and Liphanyan village covering five farmers with an aim to popularize IFS technology among the farming community. Under this project, financial support for construction of low cost duck shed was extended to the farmers for housing 20 nos. of ducks. The breed selected under IFS model was Cherra Chambli which was reported to have higher growth rate and egg laying capacity.

Establishment of eco hatchery unit: Under TSP two Eco-hatchery units were established at IFS model farm at Liphanyan village, wokha and Molvom village, Dimapur with the aim of meeting the fingerling requirement of the region. On trial basis, breeding programme was undertaken during 2013 with the assistance of expert from ICAR, Barapani where more than 10,000 fingerlings of Rohu and Mrigal were successfully produced. For skill upgradation of farmers, two farmers were trained on eco-hatchery management at ICAR Barapani. During the current year, the fingerling production has been taken up with the objective to meet the demand of fingerling in Wokha and Dimapur district to some extent.



Duckling distribution at Ralan and Liphayan village



Eco-hatchery unit at Wokha

5. Introduction of improved agro-techniques in natural resource management

The *jhumias* in Nagaland are mostly practicing subsistence type of farming for maintaining the livelihood. However, the land is gradually degrading due to shortening of *jhum* cycle, high rainfall, and deforestation. Therefore, the need of the hour is to support the farmers in taking up activities for conservation of natural resources, integrating livestock component and implementing technologies into the existing system of cultivation. Soil moisture stress in the post-rainy season is the main constraint for winter crop cultivation in *jhum* field. Ensuring water availability during the lean season by harvesting rainwater as well as surface runoff from hill slopes through *jalkund* and water harvesting structures could be a viable option for improving the productivity of crops. To enhance the water productivity of the project site, the water harvesting structures may be used for multiple purposes by integrating with fish and livestock farming. For maintaining the soil fertility alder (*Alnus nepalensis*) is grown along with crops like maize, Job's tears, millet, potato, chilies, pumpkin, barley etc. Alder, a non-leguminous tree that fixes atmospheric nitrogen through nodules which develop on the roots, grows well on lands varying in altitude from 800 to 3000 m. Besides improving the soil fertility for growing crops, it is used as timber, furniture and fuel wood. Agricultural crops, together with alder trees form a very remunerative agro-forestry system and the ability of the tree to develop and retain soil fertility had been fully utilized by the tribal farmers in Nagaland.

Major interventions under TSP

Alder based *jhum* improvement programme: Alder based farming system was initiated by KVK Wokha and Longleng in *Jhum* areas at farmers' field during 2012-13. About 2500 numbers of Alder saplings were distributed to the farmers for plantation in first year *jhum* field. The farmers were trained about the importance and package of practices of alder plantation in *jhum* field for maintenance of soil fertility and prevention of soil erosion. All together fifteen farmers from five villages namely Pongching and Namching in Longleng and Longsachung, Chukitong and Okhaye of Wokha district undertook the alder plantation at their *Jhum* area covering around 5.5 ha. The farmers were provided farm yard manure for use in pit before the plantation. The plantation was carried out in 5m X 5m square methods during the middle of March-April. The survivability of alder saplings up to six months was recorded as 85% and the average height of the alder plant was observed at 2.5 m by the end of one year.



Alder sapling plantation area



Alder sapling at farmers' field

Beneficiaries adopted agroforestry model in Wokha district

Name of Beneficiary	Village	Name of saplings	Number of saplings
Yizamo Kikon	Longsachung	Alder	150
Thungj Kikon	Longsachung	Alder	350
Rentsamo Yanthan	Longsachung	Alder	170
Nchumthung Kikon	Chukidong	Alder	300
Mhao Yanthan	Okhaye	Alder	230
Nchumbemo Ezung	Longsachung	Alder	300

Low cost scientific rain water harvesting structures at Longleng: Rain water harvesting structures were introduced at Longleng to meet the shortage of water during lean period. Five beneficiaries belong to three SHGs and one farmers' club were selected for construction of low-cost rain water harvesting structure at Pongching, Orangkong and Pongo village. The structures as indicated below were constructed using Silpoulin of 200 GSM, PVC pipe for water inlet and outlet.

Farmers' name	Pond size (m ³)	Capacity of the Jalkund (lit.)	Purposes/ Utilization of harvested water (Crop/ livestock/ both/ others)	Village
Hukphang Womens' SHG	5.0 x 4.0 x 2.0	40000	Maize, chilly, cabbage, tomato, Squash	Hukphang
Mr. Hatam Phom	5.0 x 4.0 x 2.0	40000	Piggery	Shayong
Muli Denthem SHG	4.8 x 3.8 x 2.0	36000	Maize, French bean,	Dungkhao
Farmers' club	5.0 x 4.0 x 2.0	40000		Pongo
Sunila SHG	5.0 x 4.0 x 2.0	40000		Orangkong



Large cardamom based agro-forestry model: Large cardamom, an important cash crop is very much suited to agro climatic condition of Nagaland. The cultivation of large cardamom has got tremendous potential due to higher market demand. Keeping this in view, few SHGs were promoted for cardamom cultivation during 2013-14. Under agro-forestry model, Thaila SHGs of Hukphang village, Longleng was selected for cultivation of large cardamom.



Site selected for Large Cardamom cultivation

Large cardamom based agro-forestry model established at Longleng

Name of SHG beneficiaries	Village	Name of SHG beneficiaries	Village
Onya	Hukphang	Phiikyong	Hukphang
Paitam	Hukphang	Jengjong	Hukphang
Shojie	Hukphang	Aphong	Hukphang
Yenthai	Hukphang	Nyeishom	Hukphang
Chingong	Hukphang	N. chonglan Phom	Pongching
Mongyung	Hukphang	V. Ango phom	Yongam
Mala	Hukphang	Pangniila phom	Longleng

Vegetable production under low cost polyhouse condition: Growing of vegetables round the year for nutritional security and income generation for tribal farmers in the region is one of the most important activities. Keeping these things in mind, KVK Longleng initiated field activities to demonstrate the low cost poly house for vegetable cultivation. Two numbers of polyhouse were constructed, one in Hukphang and the other one in Pongo village. Altogether, 11 numbers of farmers were benefited, 01 from pongo and 10 farmers from Shaubo SHG from Hukphang village. Prior to construction of the polyhouse, one day training and demonstration was conducted for different vegetables production especially tomato, carrot, broccoli and Naga king chilli.

List of beneficiaries for low cost polyhouse

Name of the beneficiaries	Village	Name of the beneficiaries	Village
Y. Lemei	Hukphang	N.Nyakloi	Hukphang
L. Nyinylei	Hukphang	Y.Ngapshom	Hukphang
N. Tenying	Hukphang	S. Mamshom	Hukphang
Y. Chaiila	Hukphang	Chingkai	Hukphang
Yanem	Hukphang	Phontan	Hukphang
P. Khangyong phom	Pongo		

IFS at Hukphang village of Longleng: Fruit and tuber crops based IFS model was initiated by KVK Longleng at farmers' field during 2012-13 in Hukphang village. About 1000 numbers of orange saplings were procured from Dimapur and distributed to the farmers following an awareness programme. The farmers were trained about the package of practices for orange and tuber crops cultivation along with major crops grown in *jhum* field. Further, concept of integrated farming system was introduced incorporating different agri. horti and livestock components for generating maximum benefit. In Hukphang village an area of 2.5 ha belonging to 11 numbers of farmers were taken for establishing IFS model. Different tuber crops like tapioca, colocassia and sweet potato plantation were taken up as intercrop along with orange plantation. *Jalkhund* with a capacity of 30,000 litres was constructed for harvesting of rain water for conjunctive use during lean period as life saving irrigation and feeding to the animal etc. One low cost vermicompost unit was also constructed for converting the agro-waste materials into organic manure. Necessary inputs like FYM were provided to the farmers for plantation of orange saplings, colocassia, tapioca and sweet potato.

Beneficiaries adopted Agri-horti-silvi-pastoral farming system model

Name of the beneficiaries	Village	Name of the beneficiaries	Village
Chilong Phom	Hukphang	Y. Bhangya Phom	Hukphang
Namtok Phom	Hukphang	Shova Phom	Hukphang
Tangie Phom	Hukphang	Yangpong Phom	Hukphang
Toklong Phom	Hukphang	Rangau Phom	Hukphang
Kongba Phom	Hukphang	Bonghok Phom	Orangkong

Development of Agri-horti-silvi farming system model: Agri-horti-silvi farming system models were developed under TSP during the year 2013-2014 at Ligtak village of Longleng district. In this system various intervention of field and horticultural crops like maize, groundnut, orange



(500 no.), guava (50 no.), banana (20 no.) and vegetable crops were taken up. A total of 100 nos. of tree bean was also planted in boundary of the field. Prior to implementation at farmers' field, one day training programme about the package of practices for major field and horticultural crops was organized. Banana was planted on embankment of the pond for intensifying the model productivity and profitability. Further, an area of 2.0 ha was taken up for development of IFS model Agri-horti-silvi and fisheries. Necessary inputs like farm yard manures (FYM) were provided

to the farmers for plantation of orange, guava, maize, bhindi and cucurbits. One low cost vermicompost unit was also constructed for recycling of the biomass produced insitu and extensively used as organic manure for growing the crops in the region. Similarly, Jalkund having the capacity of 40,000 lit was constructed at site for collection of rain water for utilizing during the lean period (December-April) as life saving irrigation for vegetables crop.

Horti based farming system model at Wokha: During 2012-13, horticulture based farming system model was implemented by KVK, Wokha at Longsachung, Chukitong, Pongitong, Liphanyan and Koio village covering six beneficiaries. About 1000 orange saplings were provided to the farmers for plantation in farming system model of *jhum* area of 2 ha. The orange were planted with a spacing of 5 m x 5m in square planting method. Under the same project two numbers of pig breeding units were established in which 15 nos. of piglets had been provided to the farmers of Pongitong and Liphanyan village.

Beneficiaries adopted horti based farming system at Wokha

Name of Beneficiary	Village	Name of saplings	Numbers
Yizamo Kikon	Longsachung	Orange	250
Yankhosao Ezung	Longsachung	Orange	150
Konchio Yanthan	Longsachung	Orange	150
Nchumthung Kikon	Chukidong	Orange	200
Tokhushumo Ovung	Pongidong	Orange	250

Water harvesting structure constructed at Sanis Village of Wokha: With the initiative of KVK Wokha under TSP programmes, a water harvesting structure (BxLxD =35 m X 10 m X 2.5 m) with storing capacity of 8.75 lakh litres of water was constructed at farmers' field of Shri. M. Thunjamo Lotha, Sanis village in Wokha district of Nagaland with an objective to establish an intensive integrated farming system (IIFS) model during the year of 2014-15.

Water harvesting structure constructed at Ligtak Village of Longleng: A water harvesting pond was constructed at the foot hill of the Khangchak mountain of Ligtak village under TSP project during 2014-15. The capacity of the pond is 8.75 lakh litres with dimension of 36m x 12m x 2.026m. The catchment area of the water harvesting pond is 20ha. The elevation of the bench mark is 1303m above mean sea level. The inlet of the pond is 250m near pond which is producing base flow for 8 months (March-October). The name of the beneficiary of the pond is Mr. Pongnyei Phom who was growing only fire wood before construction of the pond. Agri-horti-silvi-pastoral and livestock based farming system have been planned in the nearby watershed. Similar water harvesting structures were also constructed at Peren and Dimapur district.

Rain water harvesting structures established during 2014-15 under TSP

Farmers' name	Pond size (m ³)	Capacity (lit.)	Purposes/ Utilization of harvested water (Crop/ livestock/ both/ others)	Village
Thunjamo Lotha	35 m X 10 m X 2.5	8.75 lakh	Maize, chilly, cabbage	Sanis
Pongnyei Phom	36 m x 12m x 2.0	8.75 lakh	IFS model	Ligtak
Ranglia	35 m X 10 m X 2.5	8.75 lakh	Maize, chilly, cabbage	Ngwala, Peren
Orenthung	35 mX 10 m X 2.5	8.75 lakh	IFS	Ruzaphema



Water harvesting structure constructed at Longleng, Peren and Dimapur

Pineapple cultivation with Black-polythene mulch at Molvum, Dimapur: The demonstration on pineapple cultivation with black polythene mulch was conducted by KVK Dimapur at Molvom village. Before selecting the beneficiary the field was surveyed. A total of 39 rolls of 50 micron thickness black polythene mulch were provided for demonstration in 1.65 ha area. The mulching was done after preparing the field by placing small bamboo pegs at 1m interval. The pineapple suckers (66,500) were planted in the month of July 2014 following double row spacing of 90X60X30 cm.



Demonstration on Black-polythene mulching for pineapple cultivation at Longleng: The demonstration on black polythene mulching for pineapple cultivation was conducted during 2013-14 at Yongam and Yongyah village of Longleng district by KVK Longleng. Three numbers of beneficiaries were provided with black polythene mulch and pineapple suckers for planting in an area of 0.5 ha. The mulching was done after preparing the field by placing a small bamboo pegs at 1m interval across the slope.

Nutrient management on *jhum* land through Vermicompost: Nutrient management is one of the most important aspects to enhance the productivity of crop in general and *Jhum* in particular. The farmers of *jhum* area grow crops for two years in a particular land and leave the same land fallow for next many years to build up the soil fertility. Therefore, the nutrient management is most important for continuous cropping through production of vermicompost by using the available farm waste *in-situ*. Keeping this thing in view, KVK Longleng initiated the production of vermicompost at farmers field in different villages across the district. Total 05 nos. of farmers as indicated below from different villages were selected for vermicopost production.



Name of the Farmer	Village	Name of the Farmer	Village
Mhono Phom	Lingtak	H. Bulong	Yongnyah
Kongbi Phom	Muli ward	N. Pangyn Phom	Pongo
P. Phom	Nyang		

6. Value addition of seasonal fruits and vegetables

Under TSP program, the farmers were trained in preparation of different value added products through different hands on training.

Tapioca chips processing: Tapioca is grown widely throughout the state across different altitude. It is used for animal feed and human consumption as well. However, there is much scope for use of tapioca as value added products viz., tapioca flour, sagu, chips etc. Keeping this in view, hands-on training on “Tapioca chips processing” was conducted for the beneficiaries of Hukphang village of Longleng district of Nagaland. Total 25 farm women from five different SHGs of Hukphang village attended the training program. All the participants were trained about the value addition

processes for preparation of tapioca chips and related products. The SHGs members had adopted the technology and undertook the chips making as home scale business for generating additional family income.



On-campus training on tapioca chips processing

Ready to serve 'citrus juice processing: North East India is the hub for citrus biodiversity. Due to remoteness and unaccessibility the citrus produce in field could not be marketed and significant amount of fruits perished before reaching to the consumers. Therefore, home scale processing of citrus juice could be a viable option for value addition and thereby enhancing the gross return of the tribal farmers of the state. To introduce the technology in Longleng, hands on training on "Citrus Juice Processing" was conducted at Pongo village on December 06, 2013. Altogether 20 participants attended the training program and learned the package of practices for juice extraction, processing and packaging of ready to serve products from oranges.



Training cum demonstration on "Citrus Juice Processing" at Pongo village

Ginger pickle making: Ginger is an important spice crop widely cultivated in North East India and has good market value during the off season. However, post harvest loss of ginger during storage and marketing is very high which leads to poor returns. The demand for ginger processed product like ginger candy, pickle etc. is very high in the region. To expose the women flock about the recent techniques of value addition, a pickle making training cum demonstration programme was conducted at Longleng. 10 beneficiaries participated in programme from Hetphu SHG of Hukphang village. The techniques were well adopted by the participants and presently members of SHGs have taken 'Ginger pickle making' for additional income.



Training cum demonstration on ginger pickle making by SHG members

7. On-farm demonstration of improved technologies

Under TSP programme different component of piggery, poultry, agroforestry system and IIFS were established in the farmers' field to improve the livelihood of tribal farmers of the state. The details of on farm technology demonstration conducted at different corners of the state are mentioned below.

Demonstration of scientific pig breeding

Particulars	Venue	Type of beneficiaries	Year	No. of units	No. of livestock
1 Pig breeding unit	People in Foundation, Bade	Person with disability	2011-12	1 unit	10 pigs
2 Low cost pig breeding unit	Mesoma village, Kohima	Farmer	2011-12	1 unit	5 pigs
3 Pig breeding unit	Bagty village, Wokha	Progressive Farmer	2011-12	1 unit	10 pigs
4 Pig breeding unit	Longmisa village, Mokokchung	Women farmer	2012-13	1 unit	10 pigs
5 Pig breeding unit	Longsa, Wokha	Farmers	2012-13	2 units	10 piglets
6 Pig breeding unit	Mokokchung	Farmers	2012-13	2 units	11 piglets
7 Pig breeding unit	Inbung Village, Peren	Farmers	2012-13	1unit	4 piglets
8 Pig breeding unit	Molvom village, Dimapur	Farmers	2012-13	1 unit	4 piglets
9 Low input, small scale piggary unit	Longleng	Farmer	2013-14	4 unit	20 piglets
10 Introduction of Pig breed to the existing unit	Dimapur, Mokokchung, Phek, Kohima	Progressive farmers of NPFA	2013-14	60 units	60 piglets
11 Pig breeding unit	Dimapur, Mokokchung, Phek, Kohima NPFA Dimapur	Progressive farmers of NPFA	2013-14	5 unit	30 piglets
12 Pig breeding unit	Khonoma, Kohima	Women SHGs	2013-14	4 unit	20 piglets
13 Low cost pig breeding unit along with housing	Medziphema, Dimapur	Siele SHGs	2014-15	1 unit	5 Piglets
14 Low cost pig breeding unit along with housing	Medziphema, Dimapur	Pele SHGs	2014-15	1 unit	5 Piglets
15 Fattening unit	Jharnapani	Farmers	2014-15	1 unit	10 piglets

Particulars	Venue	Type of beneficiaries	Year	No. of units	No. of livestock
16 Pig breeding unit with low cost housing	(NCHD-IT) Kiphire	Progressive farmers	2014-15	1 unit	20 Piglets
17 Pig breeding unit	NCHD-IT , Kiphire	Women farmer,	2014-15	1 unit	10 Piglet
18 Pig breeding unit	Ruzaphema	Farmer	2014-15	1 unit	05 Piglet
19 Pig breeding unit with low cost housing	New Sangsomong Village, Tuensang	Progressive farmer	2014-15	4 unit	12 Piglet
20 Low cost pig breeding unit	Nagnimora, Mon	Progressive farmers	2014-15	2 unit	20 piglets
21 Low cost pig breeding unit	Thurutsuswu village, Kohima	Farmers	2014-15	2 unit	10 Piglet
22 Pig breeding unit	Porba village, Pfutsero, Phek	Farmers	2014-15	1 unit	05 piglet
23 Pig breeding unit	ASISI centre for Integrated Development	Farmers	2014-15	1 unit	08 Piglet
24 Pig breeding unit	New Chumukedima, Dimapur	Farmer	2014-15	1 unit	08 piglets
25 Pig breeding unit	Police Checkpost, Dimapur	Farmer	2014-15	1 unit	04 piglet
26 Pig breeding unit	Wondangki Cheritable foundatation, Dimapur	Farmer	2014-15	1 unit	02 piglet
27 Pig breeding unit	Tolovu village, Dimpaur	Farmer	2014-15	1 unit	05 piglet
28 Pig breeding unit	Meren Ao, Dimapur	Farmer	2014-15	1 unit	10 piglet
Demonstration of backyard poultry farming					
29. Backyard poultry farming	Sodolozou village, 7 th Mile, Dimapur	Rural youth	2011-12	1 unit	400 chicks
30 Poultry unit	Wokha	Women SHG	2013-14	10 units	500 chicks
31 Poultry unit	Wokha	Women SHG	2013-14	1units	100 chicks
32 Backyard poultry farming	New Phor Village, Phek	Farmers	2013-14	20 units	1000 chicks
33 Backyard poultry farming	New Sangsomong Tuensang	Farmers	2014-15	06 units	300 chicks
34 Backyard poultry farming	Amahator Area, Kiphire	Farmer Club	2014-15	14 units	1400 chicks

Particulars	Venue	Type of beneficiaries	Year	No. of units	No. of livestock
35 Backyard poultry farming	Lapanhu Welfare Society, Longleng	SHGs	2014-15	40 units	2000 chicks
36 Poultry unit	Nagnimora, Mon	Farmers	2014-15	10 unit	500 chicks
37 Poultry unit	Thurutsuswu village, Kohima	Farmers	2014-15	02 units	500 chicks
38 Poultry unit	Ngwalwa village, Peren	Farmer	2014-15	1 unit	200 chicks
39 Poultry unit	Tir Village Seitheikiema	Farmer	2014-15	1 unit	300 chicks
40 Poultry unit	Tir Village Seitheikiema	Farmer	2014-15	1 unit	350 chicks
41 Poultry unit	Kukidolong, Dimapur	Farmer	2013-14	1 unit	200 chicks
42 Poultry unit	WC found. Dimapur	Farmer	2013-14	1 unit	100 chicks
43 Poultry unit	Punglwa village, Peren	Farmer	2013-14	1 unit	100 chicks
44 Poultry unit	Jharnapani	Women Farmer	2013-14	1 unit	100 chicks
45 Poultry unit	Chuphobozou town, Kohima	Women	2013-14	1 unit	50 chicks
46 Poultry unit	Chumukedima	Farmer	2014-15	1 unit	200 chicks
47 Poultry unit	Dimapur	Farmer	2014-15	1 unit	100 chicks
Integrated Farming system					
48 Duck cum fish integrated farming system	Wokha	Women SHG	2013-14	5 unit	250 ducklings
49 IFS model	Longleng	Farmers	2013-14	1 unit	2 ha
50 Integrated farming system	Medziphema, Dimapur	Farmers	2014-15	1 unit	Piglet: 05, Citrus: 20
Dairy farming					
51 Dairy unit	Molvom Dimapur	Farmer	2014-15	1 unit	03 Cow
52 Dairy unit	Tir Village Seitheikiema	Farmer	2014-15	1 Unit	06 Cows
Jhum improvement /agroforestry					
53 Tree bean plantation,	Wokha	Women SHG	2013-14	4 unit	2 ha
54 Maize seed production	Wokha	Women farmer	2013-14	3 unit	2 ha

Particulars	Venue	Type of beneficiaries	Year	No. of units	No. of livestock
55 Input distribution for rice/oilseed	Longleng	Women farmer	2013-14	20 unit	2 ha
56 Seed production of toria	Dimapur	Farmers	2013-14	250 Farmers	250 ha
57 Large cardamom cultivation	Longleng	Farmers	2013-14	1 unit	1 ha
58 Vegetables production	Longleng	Women SHG	2013-14	2 unit	0.2 ha
59 Low cost Jalkund	Longleng	Farmers	2013-14	7 unit capacity	33000 lires
60 Demonstration of Coconut plantation	Dimpaur	Progressive Farmer	2014-15	120 no.	0.2 ha
61 Demonstration of Coconut plantation	Dimapur	Progressive Farmer	2014-15	120 no.	0.2 ha
62 Demonstration of low cost Mushroom production unit	Longleng	Women SHG	2014-15	4 units	Low cost housing, and spawn
63 Demonstration of Kiwi plantation	Mokokchung	Farmer	2014-15	500 no.	2.5 ha
64 Rain water harvesting unit	Longleng	Farmer	2014-15	1	8.75 lakh litre water
65 Rain water harvesting unit	Wokha	Farmer	2014-15	1	8.75 lakh litre water
66. Rain water harvesting unit	Peren	Farmer	2014-15	1	8.75 lakh litre water
67. Rain water harvesting unit	Dimapur	Farmer	2014-15	1	8.75 lakh litre water
68. Vermicompost unit	Ligtek	Farmer	2014-15	1	-
69. Vermicompost unit	Yongnyah	Farmer	2014-15	1	-
70. Vermicompost unit	Muli ward	Farmer	2014-15	1	-
71. Vermicompost unit	Pongo	Farmer	2014-15	1	-
72. Vermicompost unit	Orangkong	Farmer	2014-15	1	-

8. Front line demonstration of improved agro-technologies

Front line demonstrations are special kind of field demonstrations initiated by Indian Council of Agricultural Research with the inception of Technology Mission on oilseed crops during mid-eighties. Under TSP program front line demonstrations were conducted in three major areas, viz., 1. Popularization of high yielding varieties of maize (RCM-75, 76, DMH 849, HQPM -1), paddy (Ranjit, RCM-11), soyabean (JS-335), 2. Increasing cropping intensity by inclusion of short duration toria (TS-36, 38) and linseed (Neelam, Sweta, Subhra) as double cropping after rice fallow, 3. Amelioration of soil health through furrow lime application.

Yield of major field crops in different locations of Dimapur district

Particulars	2012-13			
	No. of Demo.	Area (ha)	Demo yield (q/ha)	Local check yield (q/ ha)
Maize RCM-75	22	10.50	22.60	18.15
Maize RCM- 76	22	10.50	23.37	18.15
Maize DMH 849	350	167.50	33.45	18.15
Maize HQPM-1	273	135.50	31.00	18.15
Paddy Ranjit	37	20.50	32.40	27.00
Soybean JS 335	27	11.25	9.70	7.35
Soybean JS 9560	18	5.25	11.87	7.35



Demonstration of maize cultivation in Bade village

List of beneficiaries involved in maize, rice and soybean growers in Dimapur under TSP

Maize

Village	No. of Farmers	Village	No. of Farmers
Seithekima A	5	Vidima	2
Domokhia	1	Farmers Club Domokhia	16
Doyapur	8	Sovima	1
Ruzaphema	2	Doyapur	2
Vidima	1	Medziphema	3
Bade	1	Dhansiripar	1
Pherima A	1		

Village	No. of Farmers	Village	No. of Farmers
Rice			
Domokhia	1	Seithekima A	3
Medziphema	1	Dhansiripar	2
Bade	1	Domokhia	3
Soybean			
Ruzaphema	2	Half Nagarjan	1
Seithekima C	2	Dhansiripar	4
Pherima A	1	Doyapur	2
Domokhia	1	Seithekima A	1
Vidima	4		



List of maize (RCM -76) and rice (Ranjit) growers at Peren district

Village	No. of Farmers	Village	No. of Farmers
Maize (RCM-76)			
Heningkunglwa Village	11	Jaluki Town Ward (2)	5
Old Jalukie 'A' Sector, Peren	5	Lamhai Village, Peren	21
Mhainamtsi Village, Jaluki	5	Jalukie Zengeli	16
Old Jalukie 'B' Sector, Peren,	6	Jalukie Town Ward-8	10
Jalukie 'B' Sector, Peren	9		
Rice (Ranjit)			
Jalukie 'B'	10	Samziuram, 'C' Block	9
Samziuram, 'C' Block, Jaluki,	1	Gaili Village	19
Jalukieram	5	Samziuram, 'C' Block,	10
Heningkunglwa Village	8	Old Jalukie Sector C	6
Mhainamtsi Village, Peren	1	Old Jalukie (lower)	4
New Jalukie Village, Peren	4	Beisumpuikam, Peren	20
New Jalukie	26	Jalukiekam, Pere	10
Deukwaram Village	19		

List of beneficiaries involved in maize growing at Zuhneboto and Mon district

Village	Beneficiaries	Organization/ Club name	Farmers
Aotsakilimi	15	Hills Farmers Club, Aboi	7
Aizuto/Lokobo	8	Yangmon River Farmers Club, Sowa Changle	1
Satakha	7	Choknyu Farmers Club, Choknyu	1
Rotomi	1	Farmers Friend, Yonghong & Yei village	1
Surumi	2	Tuimei Farmers Club, Tuimei	3
Akuluto	1	Choknyu Farmers Club, Choknyu	3
Atoizu	5	Langmeang Farmers Club, Langmeang	1
Phuye New	3		

FLD on Pea and maize under TSP: Garden pea and winter maize were introduced as second crop in 1.1 ha area of Orangkong, Yongam, Pongo and Hukphang villages of Longleng district during 2013-14. The crops were sown after harvesting of rice in 1st and 2nd week of October, 2013. The average pod yield of pea was recorded 40-50 q/ha in different location of village. The names of the beneficiaries are mentioned below.

Name of the farmer	Village	Name of the farmer	Village
V. Ango	Yongam	T. Nyaknyo	Pongo
P. Yimngoi	-do-	Amung	-do-
L. Ayong	-do-	Pongla	-do-
P. Metlong	-do-	Among	-do-
L. Napeit	-do-	H. Pongmei	-do-
S. Vanlong	-do-	B. Pangau	-do-
N. Langkhi	-do-	Enam	Orangkong
S. Vanlong	-do-	Ecnya	-do-
A. Monglong	-do-	Ponghok	-do-
K. Liya	-do-	Angai	-do-
N. Moshaii	-do-	Tanchai	-do-
Anglim	-do-	Kamnyaii	Hukphang
I. Metting	Pongo	Pangshaii	-do-
Y. Chau-e	-do-	Lemai	-do-
L. Bithe	-do-	Metngoi	-do-
Chophen	-do-	Chaiilei	-do-

Field demonstration on lime and fertilizer application in Maize: The soil of Nagaland is generally acidic in nature. The acidic soil restricts the growth and production of maize markedly. Keeping this in view, front line demonstration of furrow lime application was conducted in farmers' filed under TSP. Application of lime @500 kg/ha was appeared to be effective in reduction of soil pH and improving the crop productivity upto 10%.



FLD on Maize at Atiezo area, Zunheboto

FLD on Maize at Rotomi area, Zunheboto

Yield of maize variety RCM-75 and soil pH before and after the crop

Particulars	Initial soil pH	Final Soil pH	Yield (Q/ha)
Demonstration	5.04	5.22	26.63
Farmers practice	5.04	4.98	24.24

Demonstration of furrow lime application in maize

Village	No. of farmers/ Group Name	Village	No. of farmers/ Group Name
Seithekima A	1	Seithekima A	Nourhepfu SHG
Domokhia	3	Doyapur	3
Rengmapani	Kenezing SHG	Liphanyan	Sosorotsu SHG
Yanpha	Cherry SHG	Yanpha	Ranka SHG

Collaborative efforts with District Agriculture Office, Dimapur: A total of 50 hectares under winter maize was covered with hybrid maize variety HQPM-1 in Dimapur. The demonstration programme was conducted in collaboration with DAO, Dimapur in 2012.



FLD on hybrid maize HQPM-1 at Domokhia

Seed distribution of Toria and pea

Low cost Mushroom Production Unit at Longleng: Four nos. of low cost mushroom production units were constructed at Orankong, Longleng, Hukphang and Pongching village.



Low cost mushroom production unit at Orankong and Hukphang village

9. Capacity building through training and awareness campaign

Several capacity building programs were undertaken to popularize livestock rearing, improved package of practices for maize cultivation, integrated farming system, soil water conservation, value addition of fruits and vegetables, mushroom production *etc.* A number of awareness cum training programs, exposure visits and interactive meet were organized both off and on campus covering beneficiaries from all the districts of Nagaland. Details of the training program organized during 2013-15 are mentioned herewith.

Capacity building program undertaken under TSP during 2013-15

Sl. No.	Name of the training program	Year	Participants (No.)
1.	Training cum chicks distribution program at Pftusero, Phek	2013-14	53
2.	Awareness on creation of rural economy through livestock and poultry farming in collaboration with SASRD, NU, Medziphema	2013-14	25
3.	Promotion of pig breeding for livelihood security and employment generation at Mokokchung	2013-14	62
4.	Nutritional security and income generation through IFS approach at ICAR Nagaland Centre	2013-14	32
5.	Scientific management of pig production at Longleng	2013-14	20
6.	Scientific mushroom production technology at Longleng	2013-14	23
7.	A hands-on training on tapioca chips processing at Longleng	2013-14	25
8.	Training on improving the agricultural practices for rural livelihood at Yampha, Wokha	2013-14	60
9.	Hands on training on fish production including eco hatchery at ICAR Umiam	2014-15	05
10.	Women empowerment and nutritional security through pig and poultry farming at ICAR Nagaland Centre	2014-15	22
11.	Multidisciplinary training for rural youth at ICAR Nagaland Centre	2015-16	26

Seed distribution cum training programmes at Peren: Seed distribution ceremony at Jalukie Town Hall, Peren district was organized by ICAR RC for NEH Region, Nagaland Centre, Medziphema in collaboration with the Confederation of Naga Farmers' Union (CONFU), Peren on 28th of April, 2012 under TSP. Truthfully labelled seeds of maize (RCM-76, 5 q) and paddy (Ranjit, 7 q) from ICAR Nagaland Centre were distributed to the farmers. About 650 farmers gathered in the programme from 25 different villages of the district. Mr. T. R. Zeliang, then Minister of planning, Geology, mining and Veterinary, Govt of Nagaland was the chief guest in the programme.



Seed distribution program at Wokha: Under TSP, seed distribution programme was organized by ICAR Nagaland Centre in collaboration with DICE Foundation at Yampha village, Wokha district, Nagaland on May 08, 2012. A total of 2.15 quintals of Maize seed (RCM-75, RCM-76, DA 61 A and Vijaya Composite) along with lime and chemical fertilizers were distributed to 50 farmers from Ralan area of Wokha district of Nagaland.

Training on maize production technology at Dimapur: Two days training programme on recent technologies in maize

production was organized by Directorate of Maize Research, New Delhi in collaboration with KVK Dimapur during July 10-11, 2012. A total of 50 maize growers from Mon, Zunheboto, Phek, Wokha and Dimapur districts attended the training program. The participants were provided with maize seeds (hybrid and composite) and farm implements (weeder and maize sheller).

Stakeholder workshop on seed production: In order to prepare a roadmap for attaining self sufficiency in seed production of major agricultural crops like paddy, maize, pulses and oilseed in Nagaland, two stakeholder



workshops were organized by ICAR Research Complex for NEH Region, Nagaland Centre in collaboration with the Directorate of Agriculture, Govt. of Nagaland at Mokokchung and Kohima on March 14 and 19, 2012 respectively. About 80 officers from Agriculture Department, Government of Nagaland attended the workshop. The roadmap for seed production programme was decided for identified varieties of crops like paddy, maize, rapeseed & mustard and pulses in a participatory mode involving KVKs, ICAR Complex and Department of Agriculture, Govt. of Nagaland.

ICAR promotes backyard Vanaraja farming at Pfutsero: ICAR is promoting backyard poultry farming with superior quality of dual purpose Vanaraja birds throughout Nagaland. As a part of germplasm distribution program under TSP,



ICAR Nagaland centre distributed 1000 Vanaraja birds to the women beneficiaries at Pfutsero on Nov17, 2013. Besides chicks distribution, various development activities like pig breeding, winter maize cultivation, double cropping etc. are being undertaken by ICAR RC Nagaland Centre, Jharnapani. Practical tips on scientific poultry rearing and strategies for poultry based entrepreneurship development were discussed during the occasion. Altogether 54 women farmers

participated and received poultry birds along with critical inputs like starter feed for initial month. The program was made successful with the kind initiative taken by Dr. Zave, Director, Dept. of Science and Technology, Govt. of Nagaland.

ICAR promotes pig breeding through artificial insemination: ICAR Nagaland Centre is promoting breeding of superior pig germplasm through artificial insemination with the aim of transforming the state from a pig importer to self sustainable in pork production by 2020. A training

program was organized under Mega Seed Project on Pig in collaboration with Nagaland Pig Farmers' Association (NPFA) and Confederation of Naga Farmers' Union (CONFU) at ICAR Nagaland Centre, Jharnapani during Dec 4-6, 2013. Twenty seven participants from eight districts of Nagaland participated in the hands on training on 'Pig breeding through artificial insemination technique'. Both theories and practical sessions were organized on semen collection and preservation,



breeding, feeding, healthcare and reproductive disease management by learned resources persons from ICAR. Dr. M. Timothy, Director, Veterinary and Animal Husbandry Dept., Govt. of Nagaland graced the valedictory program as chief guest and appreciated the efforts taken by the ICAR in implementing much awaited technique for pig breeding.

To encourage the trainees experienced on pig breeding another program on piglet distribution was organized by Nagaland Pig Farmers' Association in collaboration with ICAR on Dec 7, 2013 at Dimapur. A total of 30 piglets were distributed to six selected beneficiaries from Dimapur, Mokochung and Phek districts in Nagaland under TSP component of ICAR Nagaland Centre. Shri



Jacob Zhimomi, MLA and Chairman of DAN graced the occasion as chief guest and expressed his deep gratitude for the initiatives taken up by ICAR and NPFA for promotion of pig breeding for fulfilment of pork requirement of the state.

Promotion of pig breeding for sustainable production and marketing: ICAR is promoting breeding of superior pig germplasm for profitable production and marketing of pork products. To sensitize the farmers about the importance of scientific intervention in pig breeding for income



generation a seminar was organized jointly by ICAR Nagaland Centre and NPFA under TSP on January 31, 2014 at Mokochung. Altogether fifty two participants from different villages of Mokochung district participated in the seminar. Day long deliberation on different aspects of scientific pig breeding, health care and hygienic meat production, and package of practices on maize cultivation for mitigating the feed requirements of pigs were delivered by a team of experts from ICAR comprise of

Dr. M.K. Patra, Scientist (Animal Reproduction); Dr. Rakesh Kumar Scientist (Agronomy) and Dr. H. Moaakum, SMS (Animal Science). Dr. Bidyut C. Deka, Joint Director, ICAR Nagaland centre appreciated the efforts taken up by NPFA for promoting pig breeding at farmers' field and assured that ICAR Nagaland centre will extend full support for implementing the livelihood improvement programme in the future.

Awareness on creation of rural economy through livestock farming: To sensitize the farmers about the approaches in improvement of traditional pig and poultry farming an awareness program was organized jointly by ICAR Nagaland Centre, Jharnapani and AICRP on Pig, SASRD, NU under TSP on February 05, 2014. Twenty five participants from different villages of Kohima district of Nagaland participated in the day long program where a team of scientist experts from ICAR and NU interacts with the farmers on different issues of livestock farming. A detail guideline



for establishment of pig breeding unit and use of artificial insemination for upgrading indigenous pig population was discussed, followed by poultry management and feeding and package of practices in fodder crop cultivation was delivered. During the training program demonstration on use of hand operated chaff cutter for farm women was organized. During the concluding program, Dr. Bidyut C. Deka, Joint Director, ICAR Nagaland centre motivated the farmers to initiate pig breeding unit with improve breed and backyard poultry unit for egg production at their respective villages and assured that

the ICAR Nagaland Centre will extend full support for implementing such livelihood improvement program. The beneficiaries were provided with inputs viz., 20 piglets, 250 chicken and 4 chaff cutter during the validatory.

Empowering women SHGs of Zunheboto through training on farming system: ICAR is promoting integrated farming system with the aim of improving the nutritional security and employment generation round the year. To sensitize the rural women about importance of integrating agriculture, animal science and horticulture together, two days training programme on 'Nutritional security and income generation through integrated farming system approach' was conducted by ICAR Nagaland Centre, Jharnapani under TSP during March 6-7, 2014. Thirty two women farmers from 13 SHGs of Rotomi and Atoizu villages of Zunheboto district of Nagaland participated in the training programme.



Deliberation of theory and practicals on different aspects of improved maize production technology, poultry and pig breeding, artificial insemination



in pig, citrus and kiwi fruit cultivation and home scale mushroom production techniques were delivered by a team of scientists from ICAR. The valedictory program was graced by Hon'ble MLA, Shri. Picto Shohe, Atoizu constituency as chief guest, Dr. Akali Sema, Professor (Horticulture) and Mr. Kehio Shohe, LRD, GoN as guest of honour. Following the training program critical inputs like maize seeds, mushroom spawn were given to each beneficiary to begin income generation activity and assurance was given for establishing pig and poultry production unit at each SHGs in future.

State Level Program on pig-based integrated farming system: Two-day state level workshop on promotion of pig-based integrated farming system was jointly organized by Nagaland Pig Farmers' Association (NPPFA) and ICAR Nagaland Centre at Dimapur during April 24-25, 2014. Over 300 pig farmers from different districts participated the programme. Mr. T.R. Zeliang, then Minister for Planning & Coordination, Geology & Mining, Evaluation, GON graced the occasion as chief guest. Mr. Zeliang remarked that with people's participation and state government's attempts reduced the import rate of meat from 63.1 to 36.9%. He admitted that till date, the production and marketing of live pigs as well as "table pork" is not well organized amongst the local producers and very often the supply and price control are dictated by outside suppliers. In reference to NPPFA vision 2020 to be "self sufficient", T R Zeliang reminded that government and farmers alone could not achieve the vision and asked all agri and allied departments and other agency to join hands to achieve the same for prosperity.

Intensive hands on training program on aquaculture and fish seed production: The state of Nagaland in the Northeast region is deficit in fish production. The state mostly imports fish from



other states like Andhra Pradesh, West Bengal and neighboring Assam to meet the demand for fish. The major bottlenecks in expanding eco-culture in the states are non-availability of quality fish seeds and lack of knowledge in scientific fish farming among the farmers. The ICAR RC for NEH region with its limited manpower is making an ardent effort to popularize the fish farming in the hill states of the North East in order to enhance the fish production from the farmers' pond. A small group of six farmers belonging to *Sangtam* tribe were

imparted hands on intensive training under the Tribal sub plan (TSP) during July 01-05, 2014. The farmers were made acquaint with basic knowledge in scientific fish farming, fish seed production and hatchery management and in integrated fish farming. Dr. S.V. Ngachan, Director ICAR Umiam graced the valedictory program and distributed certificates.

Women empowerment through scientific pig and poultry farming: ICAR Nagaland Centre is promoting scientific pig and poultry farming with the aim of improving the livestock productivity and also socio-economic upliftment of women flock of the state. To sensitize the rural women about opportunities in livestock and agriculture based economic activities three days training programme was conducted on 'Women empowerment and nutritional security through scientific pig and poultry farming' at ICAR



Nagaland Centre, Jharnapani under TSP during September 23-25, 2014. A total of 25 women farmers from the 02 SHGs viz., Lirhu and Vekholo from Dimapur were participated. Deliberation of theory and practical on different aspects viz. azolla cultivation; maize production technology; poultry and pig rearing practices and artificial insemination; demonstration of poultry housing; prevention and control measures of commonly occurring diseases in pig and poultry; demonstration of commonly used medicines and vaccines in pig and poultry; utilization of tuber crops for livestock and hygienic meat production were delivered by a team of experts from ICAR. The programme was concluded with the distribution of certificates.

Training cum distribution of piglets and poultry birds: One-day training cum distribution of piglets, poultry birds and mushroom spawn was conducted by Krishi Vigyan Kendra Dimapur, ICAR Research Complex for NEH Region, Nagaland Centre under TSP on September 9, 2014 at Jharnapani village. The programme was graced by parliamentary secretary urban development affairs, Zhaleo Rio as chief guest and Dr. K.D. Kokate, Deputy Director General (DDG), Agriculture Extension



Education, ICAR, New Delhi as guest of honour.

The programme started with an invocation prayer by Kiyangulie Rusta, Pastor, Khanakhuru Baptist Church and welcome address by Poho Pusa, GB Jharnapani village. In his address, Zhaleo Rio stressed the need for collective efforts in developing the village as a role model for the nearby villages in terms of agriculture production and productivity with active participation of the farmers, KVK, ICAR, NRC on Mithun and other line departments. Dr. K.D. Kokate highlighted the opportunities of Jharnapani village and told the farmers to exploit the full potential of the agri-horti crops. He further requested the parliamentary secretary to establish an agro based industry in the village, being well connected with road and other transportation facilities. Dr. S.V. Ngachan, Director, ICAR, Umian, Meghalaya emphasized on the entrepreneurship development through mushroom cultivation, poultry rearing, piggery and fish production in the village to improve livelihood of the farming community in the area. Dr. A.K. Gogoi, Zonal Project Director-Zone-III, ICAR Barapani requested the parliamentary secretary to provide support and guidance to the directorate in implementing schemes and other related programmes through other line departments in the state. Dr. C. Rajkhowa, Director, NRC on Mithun, ICAR, Jharnapani, Medziphema appealed the youth of the village to come forward and take advantages of ICAR Complex and NRC on Mithun for enhancing farm income of the village. A total of 50 packets of mushroom spawn to 3 women SHG's, one pair of piglet each to 10 households and 10 poultry birds each to 37 households with a total of 47 households under TSP were distributed to the villagers. The programme ended with vote of thanks proposed by Dr. Anamika Sharma, Programme Coordinator, KVK, Dimapur. A total of 300 beneficiaries attended the programme. Other dignitaries present in the programme included Dr. C. Chatopadhyay, Director, NCIPM, New Delhi, Dr. Bidyut C. Deka, Joint Director, ICAR, Nagaland centre. Dr. A. K. Tripathi, Nodal Officer, KVKs, ICAR, Barapani, Scientist from ZPD unit and ICAR Nagaland Centre along with other staff of the centre.

11. List of Beneficiaries

List of the beneficiaries covered under toria and pea demonstration

Name of beneficiary	Name of village
Toria	
Keviloto (Pradip)	Vileho (Nurjamal) Seithekima C, Dimapur
Nozir	Akhro/Furkan Ali -do-
Ali Mulal	Keviloto (Akbar) -do-
Ziptho (Sabed Ali)	Manas Ali Seithekima A, Dimapur
Rafikul Islam	Abul Hayat -do-
Khulel	Barik Ali -do-
Inos Ali	Polan Miah -do-
Dou (Dulaluddin)	Hussain Ali -do-
Saib Ali	Muzamal -do-
Vizo (Rohit)	Mao (Kurpan Ali) -do-
Manik Das	Nihoto/Jalaluddin -do-
Abdul Rashi	Kosar Ali Khelazu village,
Pinglamu (Inul Haque)	Ozeto (Nurjamal) Domokhia, Dimapur
Bekhato	Ozeto (Nurul Amin) -do-
Pinglamu	In Charge (Abdul Khalik) -do-
Pinglamu (Iasin)	Mathang (Azimuddin) -do-
Pinglamu (Ianuddin)	Pinglamu (Minul) -do-
Amjad Ali	Commanding (Hazat Ali) -do-
Mathang	Abdul Hussain -do-
Gubbar	Keviliteuo (Tankanata) Seithekima C, Dimapur
Amin	Keviloto (Kailash) -do-
Mohor Ali	Surojole (Khorka Bahadur) -do-
Poham ali	Azeto (Otirai) -do-
Khuzoludin	Porbi Angami (Narbahadur) -do-
Zohoku	Neheto (Abdul Karim) Khelazu, Dimapur
Vihoku (Edis Ali)	Tisoto (Abdul Samet) -do-
Adani (Asaruddin)	Aron (Akesb Ali) Seithekima A, Dimapur
Jasemba (Jalauddin)	Field man (Abdul Majid) Khelazu, Dimapur
Maren Ao	Akele (Rossuddin) Seithekima A, Dimapur
Ram Bahadur	Khalokafpo (Arjun Bhattarai) -do-
Akeo Angami	Sahi Sema (Rishiraj Sharma) Vihokhu, Dimapur
Mao	Neiphui Rio (Bam Bahadur) Seithekima A, Dimapur
Govind Bhattarai	Viko (Ek Bahadur) -do-
Kohovi	Kohovi (Gopal Chetry) Vihokhu, Dimapur
Victo	Kohovi (Kaliprasad Dal) -do-
	Holohon (Abdul) Kukidolong, Dimapur
Dou Angami	Nieu Angami Seithekima A, Dimapur

Matong	Momin Ali	New Sowuba, Dimapur
Ao Loni (Jamir Ali)	S. Sukom (Nimar Ali)	Old Sowuba, Dimapur
Hokum (Nur Islam)		-do-
Athonla Thyag	Henivi village, Dimapur	-do-
Behoto (Nuruddin)	Thabi (Jarjahan)	Khelazu village, Dimapur
(Goheto (Najimuddin)	Manse (Jalel)	-do-
Afsa (Jainidin)	Bukho (Duku)	-do-
Afsa (Subekul)	Adie (Mamine)	-do-
Field man (Mazat)	Adie (Mohidul)	-do-
Sirpi (Rajak)	Gebto (Sakandar)	-do-
Shoto (Shir Ali)	Gabto (Adam ali)	-do-
Eujho (Siddik)	Dau (Abed Ali)	-do-
Shabuddin	Khogoko (Majibur Rahman)	-do-
Hoska (Karime)	Khogoko (Nawab Ali)	-do-
Ehoto (Halame)	Chalu (Jalal Ali)	-do-
Tujetta (Samuel)	Vihok (Nepali)	-do-
Hulu (Abul)	Ehoto (Sirajul)	-do-
Mukto (Sidul)		-do-
Abul		-do-
Jabo (Nazim)	Ayab Ali	Seithekima A, Dimapur
Chairman		-do-
Mao Engineer	Anthony Mao (Rufazul Haque	Old Sowuba, Dimapur
Lohovi (Akel Ali)	Khekia (Hoito) , Dimapur	-do-
Jamshed Ali	Murtus Ali	Domokhia, Dimapur
Dulal	Aved Ali	-do-
Kasim Ali	Hazat Ali	-do-
Hussain Ali	Ayub Ali	-do-
Amjoy Difoesa	Asman (Amir)	Dhansiripar, Dimapur
Dejiraj Girisa	Debang (Babu)	-do-
Udhan Jigdung	Kumar (Manik)	-do-
Kabul Maibangsa	Sunil (Moinodin)	-do-
Holinam (Jamal)	Bhabelal (Akhordin)	-do-
Bonbash Girisa	Laram (Momai)	-do-
Hetnoron (Nizam)	Kameshwor (Mojit)	-do-
Monjil (Alen Ali)		-do-
Loya Singh (Hussain)	Devojit Naben	Dhansiripar, Dimapur
Eraj Difoesa	Tila Jegding	-do-
Amon Difoesa (Hanu)	Subot Rajiyung	-do-
Jaykisan	Bikram Girisa	-do-
Bonbosi (Jamal)	Ekbal Difoesa	-do-
Probal Jigdung	Chantam Haflongbar	-do-
Malay Bodosa	Morton Jigdung	-do-
Sunil Jigdung	Job Kr. Difoesa	-do-
Thakesa Girisa	Dising Mura	-do-

Kumudao Jigdung	Goneswar Jigdung	-do-
Amon Difoesa	Jorsh Haflongbar	-do-
Bhobelal Jigdung	Nakesh Difoesa	-do-
Dipak Difoesa	Bulal Jigdung	-do-
Paoboi Changsan	Sana	Moava, Dimapur
Seimong		-do-
Rasul Ali		Diezephe, Dimapur

Garden pea var. Azad Pea-1

Tailor (Nazir)	Pradip	Seithekima C, Dimapur
E.R. Angami	Sato (Mohor ali)	-do-
Keviliteuo	Kevito (Bilal Hussain)	Seithekima C, Dimapur
Akhro (Furkan Ali)	Sato (Md. Jabbar Ali)	Seithekima A, Dimapur
Abdul Rashid	Abdul Karim	Khelazu, Dimapur
Akele (Rossuddin)	Aron (Akeshe Ali)	Seithekima A, Dimapur
Rohit		-do-
Jamal	Domokhia, Dimapur	-do-
Hetnoron (Nizam)	Akhorudin	Dhansiripar, Dimapur
Monjil (Alen Ali)	Laram (Momai)	-do-
Asman (Amir)	Kameshwor	-do-
Sunil (Moinodin)	Eraj Difoesa	-do-
Bhabelal	Amon Difoesa	-do-
Sunil (Moinodin)	Probal Jigdung	-do-
Laljon Misao	Molvom, Dimapur	-do-

List of participant under the training programme on mushroom production and value addition for livelihood improvement

NAME	NAME OF VILLAGE	NAME	NAME OF VILLAGE
Mongsang	Yongam	Skoju	Hukphang
Longyie	Yongam	B. Khahju	Pongo
Mhono	Yacham	S. Pangtok	Pongo
Choiang	Pongching	Onya	Hukphang
Monghi	Pongching	Chingthoi	Hukphang
Keinyui	Pongching	Pongei	Hukphang
Pangla	Sakshi	Manshom	Hukphang
Chamla	Yongam	Leneching	Hukphang
Pango	Pongching	Ngapsha	Orangkong
Tenshi	Pongching	P. Chingyung	Orangkong
Ponglin	Pongching	M. Chingyou	Orangkong
Ayong	Hekpang	S. Amenla	Pongching
Shanilung	Kukpang	J. kikon	KVK Longleng
Lella	Kukpang	Ralang	Hukpang
Meipang	Hukphang	Liaming	Hukpang

NAME	NAME OF VILLAGE	NAME	NAME OF VILLAGE
T. Yingryi	Pongo	Ponmei	Yongpam
T. Wanno	Pongo	Chanleiu	Yongpam
N. Longuyi	Pongo	Leishak	Pangching
B. Antra	Pongo	Esther	Yongam
Nyakloi	Hukphang	Leiwai	Hukpang
Chuham	Hukphang	Alok	Hukpang
Tinyung	Hukphang		

List of beneficiaries in training program on Promotion of Pig Breeding for Sustainable Production and Marketing”

NAME	NAME OF VILLAGE	NAME	NAME OF VILLAGE
C.P. Nungshilong	Tzurang Valley, Changki	Repala	Longmisa
Chuba Pongener	NPFA Advisor	Atila	Longmisa
Dr. Wati	NPFA Treasurer, Japhu	Kumzukmongla	Longmisa
I.Takum imsong	Unger	Gemtisangla	Aliba
I.Sama	Longmisa	A.Longkumer	Sangtemla Mokokchung
Metem	Mangametong	K. Katy Dimapur	Secretary, NPFA,
Lipok	Khensa	Tawaba	Longmisa
Lima	Khensa	Imtisangla	Imchen kimong
Tinu	Ungma	Otikumla	Mongsenyimti
S. Toshi	Longkong	Sentinungla	Mongsenyimti
Talitemsu	Longsa	Merenla	Mopungchukiet
Lanuakum	Longsa	Imsurenla	Chari
Alemkasa	Longsa	Temjennenla	Mokokchung Compound
Moatemsu	Longsa	Asenla. N.	Mokokchung Compound
Apokla	Longsa	Imlirenla	Aongza Mokokchung
Temsulila	Longkong	Tialemla	Arkong, Mokokchung
Atula	Sungratsu	Temsutula	Sangtemla Mokokchung
Akanglemla	Longkong	Temsuyangla	Majakong, Mokokchung
Bendangmongla	Keninguer	Temjennila	Sangtemla. Mokokchung
Nokinsangla	Keninguer	Imtinungsang	Latempang, Mokokchung
Purlemla	Mongsenyimti	Rev. S Aier Dimapur	NPFA President,

NAME	NAME OF VILLAGE	NAME	NAME OF VILLAGE
Azungla	Mongsenyimti	Ayimba	Dilong Ward, Mokokchung
Amongla	Longsa	Satemzulu Jami	Ungma
Amenla	Asangma	Talitemsu	Ungma
Tiala	Mopungchukiet	Yangerla	Ungma
Akala	Longmisa	Tsuktinungsang	Ungma

List of beneficiaries in awareness on creation of rural economy through livestock and poultry farming

Sl. No	Name of farmer	Village	Sex	Mobile no
1	Keviu Kehie	Mezoma	M	9856682746
2	Kehieroko Kehie	Mezoma	M	9615172214
3	Ropfusenuo Kehie	Medziphema	F	8730057504
4	Nguvilie Kehie	Mezoma	M	9089834587
5	L. Measahou	Mezoma	F	98568336
6	Vephilie Khatsu	Mezoma	M	9615338085
7	Ruopfuzhalie Zhinyu	Khonoma	M	9615634790
8	Thekrusur Meru	Khonoma	M	8575960411
9	Kedobilie Meru	Khonoma	M	9856530491
10	Azhalie Upru	Khonoma	M	9856312754
11	Metsivituo Bieyiese	Mezoma	M	8014972479
12	Cavinyu Kuotsu	Khonoma	M	9615772416
13	Khotsonuo	Meriema	F	8575670954
14	Beizonuo	Meriema	F	8014840991
15	Robin	Sechuzubza	M	8014828632
16	Rose Mary Kieluhuo	Chiephobozou	F	
17	Mezhuzokho Nipu	Sechuzubza	M	9089893746
18	Rovi Kuotsu	Mezoma	M	9436070286
19	Kevikietuo	Medziphema	M	9774379916
20	Irene	Kohima	F	9402214786
21	Srijana	Medziphema	F	8014549481
22	Dr. R. Nakhro	NU SASRD	M	9856838604
23	Kekhriekolie	Mezoma	M	8575245267
24	Dr. Uihielie Sanchu	Dimapur	M	9856618823
25	Kuosevo	Mezoma	M	9436434599

List of beneficiaries in training Programme on Nutrient Security and income Generation through farming system approach

Sl. No	Name of farmer	Address with name of village	Mobile no.
1	Khegoli	Atoizu, Zunheboto, Achiku	9862572470
2	Tovini V.	Atoizu, Zunheboto, Achiku	9856683803
3	Zhekhuli	Atoizu, Zunheboto, Achiku	8794692149
4	Tokali H. Chophi	Kuphukito, Akuhaito	9615926433
5	Hetoni	Kuphukito, Akuhaito	9856587322
6	Atoli Z. Awomi	Rotomi	9089989847
7	Hovili V. Shohe	Rotomi	9615435509
8	Tovini	Asukuto town	8730950916
9	Atoni K. Chishi	Aza Mekua, SHG	8974548454
10	Lhosheli	Akikili, SHG	9774826261
11	Vitoli	Ipulou, SHG	9862697211
12	Hokheliki	Ipulou, SHG	8729878766
13	Hekaholi K.	Aza Mekua, SHG	9856821616
14	Shehoni	Aza Mekua, SHG	9862102093
15	Shekatoli	Akikili, SHG	9774830248
16	Ghukhahi	Akikili, SHG	8974862611
17	Akheli	Zhukucho, SHG	9612208648
18	Niholi Aye	Zhukucho, SHG	8974202903
19	Hoili Chophy	Xakighe, SHG	8414826889
20	Sheniho Z.	Xakighe, SHG	9862641839
21	Nikoli H.	Ducas, SHG, Aizuto	8732899060
22	Kashini Chishi	Ducas, SHG, Aizuto	8413277299
23	Hetoni Awomi	Ducas, SHG, Aizuto	9862718480
24	Atoni N. Chisho	NISA, SHG, Atoizu	9612757503
25	Sheniho Sema	NISA, SHG, Atoizu	8974156811
26	Anitoli Aye	Nikuphu,SHG, Vekoho	8791932594
27	Katoli Aye	Nikuphu,SHG, Vekoho	9615771249
28	Holi Aye	Nitsunipu, SHG, Vekoho	8794046207
29	Kanili Aye	Nitsunipu, SHG, Vekoho	

List of participant in hands on training program on ecoculture and seed production

- | | |
|-------------------|-------------------|
| 1. Mr. Chunlongse | 4. Mr. Lisakyu |
| 2. Mr. Litsakyu | 5. Mr. Thsithrise |
| 3. Mr. Bedang | |

List of beneficiaries in hands on training program on women empowerment through scientific pig and poultry farming

S.No	Beneficiaries	S.No.	Beneficiaries
1.	Adule Kapfo-Chairman (Vekholu SHGs)	12.	Molu Domeh– Chairman (Lirhu SHGs)
2.	Anyimi Lotha-Secretary	13.	Neiteu Kapfo– Secretary
3.	NüsezölüRhakho-Treasurer	14.	Phrune Krocha– Treasurer
4.	Wepezolou Lohe	15.	Neikhroteu Sakhamo
5.	Nüthilü Rhakho	16.	Punezolü Kezo
6.	Medoleü Lomi	17.	Zane Mocha
7.	Wepeteü Chiero	18.	Zane Domeh
8.	Rone Movi	19.	Zulhiteu Tsüzhü
9.	Neshü Movi	20.	Kedoweü Kapfo
10.	Sevinuo Lasuh	21.	Khazü Domeh
11.	Anei Domeh	22.	Neishu Krome

List of beneficiaries involved in maize cultivation programme under TSP during 2013-14

Name of Piggery farmers	Proprietor	Location/District	Contact No.
Bright Home Farm	Rev. Supong Aier	Aoyimkim, Dmr.	9612468857
C.P Piggery Farm	Mr. Temsumoa Aier		
	1. Mr. S.C Pongener	Tsurang valley,	9856041069
	2. Mr. C.P. Nungshilong	Changki, Mkg dist.	
Suhoi village	Mr. R. Katy	Suhoi village, DMV	9856208417
Sunrise Piggery	Dr. R. Wati	Thahekhu villlage	9862092268
Chishi Garden	Mr. Bomito K. Chishi	Chekiye, DMV	8974025245
N.P Piggery Farm	Mr. NIngsang	Aoyimkim, Dmr.	9774171563
Semdo Piggery Farm	Mr. Merentemjen	Longsa, Mkg.	9436017424
Pristine Farm	Mrs. D. Kapfo	Chumukedima, Dmr.	9436444309
Zelga Hog Farm	Mrs. Apina Liegise	Gaili, Peren	9436017753
Integrated Piggery	Mr. R. Lepden Lkr	MKg.	9436006523
Amokmeren piggery Farm		Mokokchung	9436607085
Suteplenden Piggery Farm	Mr. Imnatoshi	Mkg.	9436006513
Nito Farm	Mrs. Ghotoli Swu Sema	Hokhezhe, Dmr.	9436013050
Orija Piggery Farm	Mr. I. Imkong	Diphuphar, Dmr.	9436000101
Hollotoli FArm	Moses	Vihikhu, Dmr	
R. Chuba Piggery Farm	Mr. R. Chuba Ozukum	Yimchenkimong	8729926649
Nisheli Farm	Mrs. Nisheli Farm	Nuiland	9436831565
Cholovi Piggery Farm	Mughato	Ikishe village	9856436456
Hayi Piggery Farm	Achum Ngullie	Siethekima C	9436062087
Savino Piggery Farm	Mhasilie Savino	Medziphema	8794727186
Hosa Farm	Housa khape	Pfutsero	9089654618
Astana Pig Farm	Honito	Kuhuboto	9436433267
Bewe Farm	Kewechu Kapfo	Pfutsero	9612002679

Name of Piggery farmers	Proprietor	Location/District	Contact No.
Takhe Farm	Rev. Dr. K. kapfo	Chumukedima	9436000502
Ato Metha Farm	Ato Metha	Urta Village , Dmr.	9856360867

List of SHGs for distribution of chicks under Tamlu Block of Longleng District

1. Konjumla SHGs

S. No.	Name
1.	Mrs. Ailong
2.	Mrs. Aula
3.	Mrs. Wongphen
4.	Mrs. Phaugnyu
5.	Mrs. Kandok
6.	Mrs. Lemshing
7.	Mrs. Taula
8.	Mrs. Nyuplen

2. Khonglangla SHGs

S. No.	Name
1.	Mrs. A. Choingam
2.	Mrs. Nyemphe
3.	Mrs. Wongang
4.	Mrs. Chuphen
5.	Mrs. Omdan
6.	Mrs. Moiyau
7.	Mrs. Ailong
8.	Mrs. Longla

3. Phummei SHGs

S. No.	Name
1.	Ngandang
2.	Thenyu
3.	N. Nyuden
4.	Lachu
5.	Chumshauh
6.	Lidong
7.	Ongpang
8.	Ongthai
9.	Longshen
10.	Phalau

4. Konmei SHGs

S. No.	Name
1.	Ngalong
2.	Leishing
3.	Nyuphen
4.	Nganmei
5.	Honmei
6.	Nyuli
7.	Peken
8.	Wanlen
9.	Bauei

5. Moijila SHGs

S. No.	Name
1.	N. Denchu
2.	W. Mudao
3.	L. Baunyuk
4.	M. Limei
5.	M. Shamnyei
6.	L. Wonglen
7.	A. Ajenla
8.	L. Shinglem

6. Monjemla SHGs

S. No.	Name
1.	Bongshu
2.	Benli
3.	Manshing
4.	Wanmei
5.	Yangerla
6.	Henyan
7.	Yongleng
8.	Doilen

7. Shotheila SHGs

S. No.	Name
1.	Yempuh
2.	Phangnyu
3.	Li-e
4.	Yungphen
5.	Yingken
6.	Choi-an
7.	Liphe
8.	Shahie
9.	Chonglung

8. Chingjila SHGs

S. No.	Name
1.	B. Phuhshing
2.	O. Yingloi
3.	M. Limei
4.	C. Moi-ci
5.	S. Tadong
6.	P. Yemsho
7.	L. Yukang
8.	A. Shongshen
9.	S. Chubala
10.	L. Chingshem

9. Khomala SHGs

S. No.	Name
1.	Atula
2.	Pangyung
3.	Wangngoi
4.	Munyei
5.	Shongnyei
6.	Nyamthei
7.	Ongvau
8.	Yukpom

10. Khangkhala SHGs

S. No.	Name
1.	Kima
2.	Phunyi
3.	Nyaknyu
4.	Longe
5.	Phunnyei
6.	Vyiman
7.	Paupen
8.	Mulen
9.	Henau

11. Choila SHGs

S. No.	Name
1.	Nyiamau
2.	Nyutai
3.	Seno
4.	Yungnyei
5.	Asangla
6.	Nyamngoi

12. Monghomla SHGs

S. No.	Name
1.	C. Lemla
2.	M. Laje
3.	Z. Temsula
4.	Phuhjai
5.	Nyahje
6.	Aite
7.	Amenla
8.	Ayangla
9.	Yukvau
10.	Enyu

13. Lihola SHGs

S. No.	Name
1.	Achai
2.	Lushevi
3.	Modan
4.	Enyei
5.	Asangla
6.	Meije
7.	Henyung
8.	Yingnyu

15. Denya Women SHGs

S. No.	Name
1.	Ngoiang
2.	Ailong
3.	Phuhven
4.	Chuje
5.	Henyan
6.	Mungyu
7.	Buken

17. Chingshemla SHGs

S. No.	Name
1.	Nyu-e
2.	Monglong
3.	Shaokeip
4.	Longlen
5.	Shothei
6.	Yingmoi
7.	Bethel
8.	Baneo
9.	Mongkup

19. L.N.S. SHGs

S. No.	Name
1.	Akala
2.	Among
3.	Nyemling
4.	Lanu
5.	Alen
6.	Alem

14. Mongjemla SHGs

S. No.	Name
1.	Shenglong
2.	Baulen
3.	M. Manpong
4.	O. Akumla
5.	Phuchu
6.	B. Yungshao
7.	Yangong
8.	Mongkhai

16. Yingli Welfare Tribal SHGs

S. No.	Name
1.	Ponglen
2.	Pongyei
3.	Angshet
4.	Shamnyu
5.	Moithei
6.	Choilong
7.	Chijpoh

18. Mongchemla SHGs

S. No.	Name
1.	Henyung
2.	Phomnyut
3.	Nongmei
4.	Nyuwong
5.	Manchum
6.	Pomlen
7.	Langou
8.	Angla
9.	Owshing

20. Chemla SHGs

S. No.	Name
1.	Nyuden
2.	Liwau
3.	Chinlen
4.	Yungphen
5.	Shahnen
6.	Henlen

21. Heongla SHGs

S. No.	Name
1.	Phuhken
2.	Phemi
3.	Langphen
4.	Manngoi
5.	Ladong
6.	Nyuli
7.	Easter
8.	Langnyei

22. Nginkhumla SHGs

S. No.	Name
1.	Choimei
2.	Asang
3.	Nyuman
4.	Longla
5.	Moilen
6.	Liang
7.	Honlu
8.	Muling

23. Chingkhei SHGs

S. No.	Name
1.	Lenghei
2.	Chingak
3.	Moingam
4.	Phakmei
5.	Choithei
6.	Kontak

24. Nyingshenla SHGs

S. No.	Name
1.	Nyuwenth
2.	Mongoi
3.	Pongngoi
4.	Omtan
5.	Chongje
6.	Moyau

25. Ngichoila SHGs

S. No.	Name
1.	Chongngoi
2.	Ayangla
3.	Dongaok
4.	Angjah
5.	Yimyung
6.	Ongto

26. Doimei SHGs

S. No.	Name
1.	Longla
2.	Mongmei
3.	Alen
4.	Moingan
5.	Aimei
6.	Manpong

27. Ongchu SHGs

S. No.	Name
1.	Ongyep
2.	Chuphen
3.	Nyuman
4.	Epen
5.	Owdang
6.	Amen
7.	Pongau
8.	Bongkhen

28. Shukhum SHGs

S. No.	Name
1.	Khumpong
2.	Shulen
3.	Nyuwau
4.	Owang
5.	Manlong
6.	Thungoi
7.	Denmei
8.	Baten

29. Baloi SHGs

S. No.	Name
1.	Chingloi
2.	Chongje
3.	Ailing
4.	Balong
5.	Nyukhum
6.	Phenla
7.	Lyungen

31. Hongchingla SHGs

S. No.	Name
1.	Lenghei
2.	Chingak
3.	Moingam
4.	Phakmei
5.	Choithei
6.	Kontak
7.	Mongang
8.	Yongshen

33. Hoichemla SHGs

S. No.	Name
1.	Wongshet
2.	Mene
3.	Owpen
4.	Langnyei
5.	Chahlen

35. Likenla SHGs

S. No.	Name
1.	Wanje
2.	Shenkhem
3.	Haulen
4.	Bongthei
5.	Lalen
6.	Bahmei

30. Chingkhei SHGs

S. No.	Name
1.	Lenghei
2.	Chingak
3.	Moingam
4.	Phakmei
5.	Choithei
6.	Kontak
7.	Mongang
8.	Yongshen

32. Hongchingla SHGs

S. No.	Name
1.	Konai
2.	Ngoiang
3.	Phapen
4.	Longlang
5.	Enong
6.	Nyamla

34. Moilem SHGs

S. No.	Name
1.	Choilen
2.	Yenau
3.	Langnyei
4.	Choimei
5.	Owthai

36. Chingmeila SHGs

S. No.	Name
1.	Chingmeila
2.	Chingmeila
3.	Chingmeila
4.	Chingmeila
5.	Chingmeila
6.	Chingmeila

37. Bangshela SHGs

S. No.	Name
1.	Mophen
2.	Yingnyu
3.	Manlem
4.	Henlen
5.	Denyung
6.	Konjai

38. Behela SHGs

S. No.	Name
1.	Bauom
2.	Wongshet
3.	Lishet
4.	Denlung
5.	Tangnyu

39. Kongshongla SHGs

S. No.	Name
1.	Phapen
2.	Alang
3.	Wauje
4.	Manom
5.	Nyiamthai
6.	Bauei

40. Ametchongla SHGs

S. No.	Name
1.	Manan
2.	Pangphe
3.	Nyiamyau
4.	Chuken
5.	Moiphen
6.	Shenglong

41. Villa's Women SHGs

S. No.	Name
1.	Mophen
2.	Liphen
3.	Chingyang
4.	Yingyu
5.	Phamei
6.	Nyungyung
7.	Yangnong
8.	Chumei
9.	Konjoi

11. Success story

1. Empowerment of rural youth through backyard poultry farming: Rural poultry production under the free range and semi-intensive system is one of the viable alternatives for improving the livelihood of rural household. The present study describes the successful venture of Mr. Zhasavilie Kehie, resident of Sirhima village, Medziphema. He is an educated unemployed youth involved in animal husbandry activity especially poultry but the results were not satisfactory due to lack of awareness and technical know how about scientific livestock rearing. He was given three days intensive training on scientific poultry production at ICAR Nagaland Centre. Following the training, he initiated a small scale semi intensive poultry unit with 150 Vanaraja chicks provided under TSP. He has managed the feeding and vaccination with the technical guidance of ICAR Nagaland Centre. The low cost poultry house was constructed using C.G. I. sheet, bamboo mats and wire mesh. Paddy husk was used for deep litter system in plastered earthen bottom. During the first four weeks commercial starter ration was given to the birds. The birds were also supplemented with feeds like



paddy, maize grain and broken rice in the morning/evening to reduce the requirement of concentrate feed and subsequently the feed cost. The average weekly body weight was recorded from fourth to eighteenth weeks of age in representative no. of birds. The average live weight at fourth week was recorded as 425 g/bird that increased upto 1856 g/bird at eighteenth week. The survivability percentage was 96.66 per cent upto 18 weeks of rearing. The age at first laying was 165 days with average annual egg production of 159 per bird. The total input cost was Rs. 69,785 consisting cost of chicks, feeds, medicines, vaccines, transportation cost, housing and other miscellaneous expenditure. The income generated from the unit was mainly from sale of extra cocks (95 birds at average body weight of 2.27 kg at 5 months) and earned a sum of Rs. 43,200. Further, a total of 7140 eggs were produced from 45 hens and he earned a sum of Rs. 49,980 from selling of eggs. The spent hen and cock were disposed at the end of laying cycle (at 18th months) and generated a sum of Rs. 36,820. Thus the total income was Rs. 1, 30,000. Thereby, he earned net monetary benefit of Rs. 60,215 from his small scale poultry unit in one and half year. After realizing the profit he was very much satisfied and extended the poultry unit after procuring another lot of 300-400 nos. of chicks. Presently, he is maintaining more than 500 birds for egg purpose and earning more than Rs. 10,000 per month. His success has encouraged neighbouring villages to start this enterprise.

2. Backyard poultry farming-A successful venture: Mr. Vevoyi, a resident of Khushiabill village under Dimapur district approached KVK Dimapur for technical guidance before taking up poultry as an enterprise. In order to give him technical back up he was exposed to 4 days intensive training on scientific managerial practices of poultry at KVK Dimapur, ICAR Nagaland Centre. After the training, he constructed low-cost poultry house as per the specification using the locally available housing materials like bamboo mat, wooden planks etc. C.G. I. sheet was used for roofing and paddy husk as litter material. In August, 2014 he collected 200 nos. of 21 days old Vanaraja birds under TSP from ICAR Nagaland Centre. He was so convinced with the income that he got from the first batch and the experience gained from his own farm, he began to expand his farm from 200 nos. of birds to 600 and then to 1200 nos. Mortality ranges from 2-2.5 % which is very negligible. He rears the birds for two and half months and disposes it to the market at a rate of Rs. 170/kg. That way, in one batch he could sale 312-331 kgs of meat earning Rs. 53040-56270 as gross income. The major expenditure included feed cost, cost of chicks, medicines and miscellaneous expenditure. Feed cost being the major problem in poultry farming; he has developed a feed crusher of 1.5 HP with 5 kg capacity. It is used for grinding and mixing of the feeds and fodders like maize, banana



leaves, chow-chow, sweet potato leaves as well as the tuber and tapioca etc. This mixture is then fed to poultry birds mainly during the day time. Vitamin and mineral mixtures in minimum quantity are also supplemented daily in order to avoid deficiency problems. The birds are let loose during day time for scavenging. This reduces the requirement of concentrate feeds and thereby reduces the feed cost. The total expenditure for rearing of 200 birds comes to Rs. 40,000-42000. The net profit from 200 nos. of poultry birds came to around Rs. 13,000-15,000.

3. Women empowerment through pig breeding: This success story revolves around Mrs. Nzano Ezung of Pongitong Village, Wokha District, who has taken the initiative in producing quality piglets and has established a small breeding unit in her backyard with the technical guidance from KVK Wokha. The breeding unit was initiated in the year 2011 with four numbers of piglets provided by KVK. In her own interest, the farmer purchased another seven piglets for extension of the unit. In the year 2013, 2 numbers of pigs were sold and 7 piglets were produced earning an income of Rs 47,100. Subsequently, in the year 2013, she has earned a total of Rs 1,50,000 by selling of 45 numbers of piglets and 2 adult pigs. Further, in 2014, a total of 31 numbers of piglets were produced and she has earned Rs 93,000 by selling of piglets @ Rs. 3000/animal. In past three years, the total income from the unit is Rs. 2,90,100 against an expenditure of Rs. 1,68,500 and thereby she has earned a net profit of Rs. 1,21,600. So far, the total piglets produced in the unit were recorded as 83 which were supplied to the fellow farmers in the village to set up similar unit.

4. Sustainable livelihood security through integrated farming system: Mrs. Mhonlumi Murry is an educated housewife from New Wokha village, Wokha district, Nagaland. She is being engaged in fisheries (150 m x 100 m) and owned potential unutilized farm area of 2.5 ha. KVK Wokha imparted training on integrated farming system and shown different models established in farmers' field to develop her unutilized land. She developed a livestock cum fish integrated farming system by utilizing the existing resources with the technical guidance from KVK Wokha. Pig and poultry sheds were constructed near fish pond with locally available bamboo and C.G.I roofing materials. A total of six piglets (Large Black Cross), 200 Vanaraja birds were provided under TSP by ICAR Nagaland Centre and 10,000 fish fingerlings from State Fishery Department. The average body weight of pig was recorded as 65 to 70 kg at 10 months of age. All four sows were conceived within 12 months and produced an average of seven piglets. She sold 24 piglets at Rs. 2500 each and earned a sum of Rs. 60,000. The Vanaraja birds were reared up to six months with overall survivability of 85 per cent. The average live weight of Vanaraja birds was recorded as 3.0 kg at 24th week. She

sold a total of 510 kg live weight at Rs. 250 per kg and earned Rs. 1,27,500. In fish pond, she allowed villagers to catch the fish for two months (July to August) at Rs. 100 per day per person and earned Rs. 30,000. From her integrated livestock–fish unit, the gross annual income was Rs. 2,17,500 against the total expenditure of Rs. 1,38,000 for cost of chicks, piglets and fish fingerlings, feed, medicines, etc. Family labour was utilized for daily farm operation. Thereby, she earned a net profit of Rs. 79,500 from her farming system in a year. After gaining experience from own farm, she has now extended her farm and is maintaining 200 to 400 Vanaraja birds round the year, a pig breeding unit, and two fish ponds. Her success reflects the positive impact of integrated farming system for maximum utilization of the resources to generate sustainable income and employment.



12. News coverage in print media

Prog on pig-based integrated farming system



Pig breeding using artificial insemination (AI) and piglet rearing at ICAR Nagaland centre

ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for pig farmers in the state. The centre has been successful in promoting pig breeding and rearing among the farmers. The centre has been successful in promoting pig breeding and rearing among the farmers. The centre has been successful in promoting pig breeding and rearing among the farmers.

Empowering SHGs through training on farming system



ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for women farmers in the state. The centre has been successful in empowering women farmers through training on farming systems. The centre has been successful in empowering women farmers through training on farming systems.

Import rate of meat, milk and egg has come down to Rs. 215 Cr: T R Zeilang



T R Zeilang, Minister for Agriculture, has announced that the import rate of meat, milk, and eggs has come down to Rs. 215 crore. This is a significant achievement for the state, as it indicates a reduction in the cost of these essential food items. The Minister has attributed this success to the efforts of the government and the support of the farmers.

Seminar on promotion of pig breeding for sustainable production & marketing



ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for pig farmers in the state. The centre has been successful in promoting pig breeding for sustainable production and marketing. The centre has been successful in promoting pig breeding for sustainable production and marketing.

ICAR empowers women through training programme



ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for women farmers in the state. The centre has been successful in empowering women farmers through training programmes. The centre has been successful in empowering women farmers through training programmes.

Awareness on creation of rural economy through livestock farming



ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for farmers in the state. The centre has been successful in creating awareness on the creation of a rural economy through livestock farming. The centre has been successful in creating awareness on the creation of a rural economy through livestock farming.

Empowering SHGs through training on farming system



ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for women farmers in the state. The centre has been successful in empowering women farmers through training on farming systems. The centre has been successful in empowering women farmers through training on farming systems.

Poultry birds distributed in Nkwareu



ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for farmers in the state. The centre has been successful in distributing poultry birds in Nkwareu. The centre has been successful in distributing poultry birds in Nkwareu.

ICAR promotes Vanaraja farming



ICAR Nagaland centre, Dimapur, has been organising a series of seminars and training programmes for farmers in the state. The centre has been successful in promoting Vanaraja farming. The centre has been successful in promoting Vanaraja farming.

NAGALAND POST DIMAPUR
THURSDAY, DECEMBER 5, 2014

ICAR promotes pig breeding through artificial insemination

Participants of the training

ICAR staff and farmers participated in a training program on artificial insemination in pigs. The program was organized by ICAR, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The training was held at the ICAR Regional Complex, Dimapur, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The training was conducted by Dr. B. C. Deka, ICAR Scientist, and Dr. P. K. Singh, ICAR Scientist. The program was a success and the participants were able to learn the techniques of artificial insemination in pigs. The program was organized by ICAR, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The training was held at the ICAR Regional Complex, Dimapur, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The training was conducted by Dr. B. C. Deka, ICAR Scientist, and Dr. P. K. Singh, ICAR Scientist. The program was a success and the participants were able to learn the techniques of artificial insemination in pigs.

Awareness on 'creation of rural economy through livestock farming'

Participants of the awareness program on creation of rural economy through livestock farming

The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of livestock farming. The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of livestock farming.

NAGALAND POST DIMAPUR
THURSDAY, SEPTEMBER 11, 2014

Training cum distribution of poultry birds under TSP

Participants of two days training cum distribution of poultry birds

The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on September 10 and 11, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of poultry management. The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on September 10 and 11, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of poultry management.

KVK Dimapur observes technology week

Participants of the technology week

The program was organized by KVK Dimapur, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Dimapur, Nagaland, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Dimapur, and Dr. P. K. Singh, KVK Dimapur. The program was a success and the participants were able to learn the techniques of technology. The program was organized by KVK Dimapur, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Dimapur, Nagaland, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Dimapur, and Dr. P. K. Singh, KVK Dimapur. The program was a success and the participants were able to learn the techniques of technology.

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KVK Longleng organizes IDP

Participants of the IDP

The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on November 15 and 16, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of IDP. The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on November 15 and 16, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of IDP.

Rural youth trained on poultry management

Participants of the rural youth training on poultry management

The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on September 10 and 11, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of poultry management. The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on September 10 and 11, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of poultry management.

Zhaleo asks farmers to utilize scientific tech

Participants of the Zhaleo program

The program was organized by Zhaleo, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the Zhaleo, Nagaland, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, Zhaleo, and Dr. P. K. Singh, Zhaleo. The program was a success and the participants were able to learn the techniques of scientific technology. The program was organized by Zhaleo, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the Zhaleo, Nagaland, on December 4 and 5, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, Zhaleo, and Dr. P. K. Singh, Zhaleo. The program was a success and the participants were able to learn the techniques of scientific technology.

Trg on poultry management in Longleng

Participants of the trg on poultry management in Longleng

The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on November 15 and 16, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of poultry management. The program was organized by KVK Longleng, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the KVK Longleng, Nagaland, on November 15 and 16, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, KVK Longleng, and Dr. P. K. Singh, KVK Longleng. The program was a success and the participants were able to learn the techniques of poultry management.

Training cum Demo on "Orange Juice Processing" was conducted by Thungchong

Participants of the training cum demo on orange juice processing

The program was organized by Thungchong, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the Thungchong, Nagaland, on December 6 and 7, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, Thungchong, and Dr. P. K. Singh, Thungchong. The program was a success and the participants were able to learn the techniques of orange juice processing. The program was organized by Thungchong, Nagaland, in collaboration with the Nagaland Veterinary University, Kohima. The program was held at the Thungchong, Nagaland, on December 6 and 7, 2014. The program was attended by 30 farmers from various villages in the region. The program was conducted by Dr. B. C. Deka, Thungchong, and Dr. P. K. Singh, Thungchong. The program was a success and the participants were able to learn the techniques of orange juice processing.