CHAPTER - IV

RURAL CREDIT OUTLAYS UNDER FINANCIAL INCLUSION
4.1: Introduction

The State Government in its perspective planning has stressed for bringing more area under cultivation, improve production and productivity, facilitate transition from mono cropping to multiple cropping, technology transfer and strengthen marketing network through efficient credit outlays and effective financial inclusion strategy. Major programmes under state plan included development of rice-based cropping system on the basis of agro-climatic divisions in the State, bringing more area under wheat in some of the selected potential regions, introduction of contingency crop production programme in areas prone to natural calamities, identification of cash crops such as potato, ginger, oil seeds, seasonal vegetables, various spices etc & action plan for enhancing production and productivity of these crop varieties, importance to creation of post-harvest infrastructure In order to improve shelf life of the perishable produces and emphasis on quality seed production and adequate storage facility for seeds (in view of high level of humidity).

4.2: Short term credit for production, marketing and food security

Agriculture which is the predominant sector of the economy of the state, contributes 27 per cent to the GSDP and employs around 63 per cent of the total workers. The state has undulating topography and the plains with below 5 degrees slope are limited to 12434 sq. km including river beds. Soils of the state are mostly shallow and recently formed and have low fertility. The scope for expansion of area under cultivation of field crops is limited to plains of East
Siang, Lower Dibang Valley and Lohit districts due to physiographic factors. Among food grain crops, highest area is under paddy, followed by maize, millet, pulses and wheat. In terms of production, paddy accounts 70 per cent of the total food grain production followed by maize, millet, pulses and wheat. The area under major food grain crops has shown a rising trend since 2000-01.

Table-4.1: Area under food-grain crops in the state (Area in ha.)

<table>
<thead>
<tr>
<th>Foodgrain Crops</th>
<th>2000-01</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>118601</td>
<td>121570</td>
<td>123500</td>
</tr>
<tr>
<td>Maize</td>
<td>38429</td>
<td>45061</td>
<td>46500</td>
</tr>
<tr>
<td>Wheat</td>
<td>4397</td>
<td>3699</td>
<td>3700</td>
</tr>
<tr>
<td>Millet</td>
<td>20149</td>
<td>21661</td>
<td>22000</td>
</tr>
<tr>
<td>Pulses</td>
<td>6202</td>
<td>8552</td>
<td>9500</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>26301</td>
<td>31854</td>
<td>32500</td>
</tr>
</tbody>
</table>

*Source: Agri Census, DoA, GoAP & Statistical Abstract of Arunachal Pradesh, 2012*

In terms of productivity, Paddy is showing an increasing trend since 2005-06. Similarly, productivity of maize and wheat have also increased since 2009-10. However, the yield of paddy, maize and wheat in the State is less in comparison to all India average yields of these crops. The yield is more than the national average in case of pulses only.
The low yield in all the major cereal crops can be improved by bringing more area under HYV crops and adoption of other modern and sustainable technological interventions like application of bio-fertilizers, bio-pesticides etc. The Seed Replacement Rates (SRR) for Paddy and Maize were 8.22 and 9.90 respectively, which was very low in comparison to the all India average of 25.87 for paddy and 44.24 for maize during 2008-09. The use of modern inputs such as HYV seeds, fertilizers and pesticides/plant protection measures is limited and confined to a few pockets in the State. For example only about 32 per cent of the net cropped area is under HYV. Although practice of soil testing is not widely prevalent as reflected in the fact that the capacity utilization of the 6 Soil Testing Laboratories in the State is only 40 per cent, the State Govt has plans to map the micro-nutrient profile of soil in various parts of the State by preparing soil fertility maps. The state is also taking measures to popularise application of fertilizers based on results of soil testing, crop demonstration and publicity with the help of ATMA. These efforts will bring improvement in application of modern methods of input use, which would in turn increase productivity. The State has duly recognized the importance of support services
for development of agriculture. It is proposed to increase the use of fertilizers and improve the per capita fertilizer consumption by extensive use of organic manure and need-based application of inorganic fertilizer keeping in consideration the preservation of soil nutrient. The Integrated Pest Management programme is being intensified along with awareness creation for use of biopesticides, rodent control methods, seed treatment and need-based use of agro-chemicals.

4.3: Agriculture Extension System

Apart from the Department of Agriculture of the State Govt, Agriculture Technology Management Agency (ATMA), Krishi Vigya Kendras, NGOs are the other agencies which are stakeholders in the extension system. There are Krishi Vigyan Kendras (KVKS) functioning in 13 districts in the State, who pioneer the agriculture extension activities bringing technology to the farmers' field. The main focus of these institutions is on demonstration of latest agricultural technology, testing and verifying the suitability of the technology in the socio-economic condition in which the farmer lives. They also impart training to the farmers, field level extension workers, officials of Agriculture Department and NGOs etc. The National Food Security Mission for Rice (NFSM-Rice) was launched in the State during 2012-13, aiming at enhancement of rice production and productivity through technological intervention on a priority basis.
4.4: Post-Harvest Infrastructure

Post-harvest management of agriculture produce is vital for arresting wastage and ensuring remunerative prices to the farmers for their produce. Arunachal Pradesh Agriculture Market Board (APAMB) provides assistance to APMCs in establishing infrastructure facilities like market sheds, storage, godowns, etc. out of the grants released by the Government of Arunachal Pradesh. There are 6 wholesale markets and 24 rural primary markets have been established at various locations in the state. However, establishment of such markets need to be supported in many more pockets of the State by the Board. With a view to facilitate marketing of the produce, the Board is providing facility for transportation of agriculture produce to a limited extent. This type of support should be more intensified. In order to improve the marketing access of the enterprising farmers, APMC Act, 1989 was amended in 2008 to provide for contract farming and facilitate establishment of private market yards to encourage private investment in agriculture marketing. However, entrepreneurs will benefit from this only if supporting infrastructure & services as mentioned above are available. Ministry of Agriculture has introduced Integrated Scheme for Agricultural Marketing (ISAM) with the objective of promoting creation of agricultural marketing infrastructure and storage capacity, promoting pledge financing and for promoting Integrated Value Chains to provide vertical integration of farmers with primary processors and to catalyze private investment in setting up of agribusiness projects and thereby provide assured market to producers and strengthen backward linkages of agri-
business projects with producers and their groups. As per the sub-scheme of Agriculture Marketing Infrastructure (AMI), 33.33 per cent subsidy is available for projects for creation of market infrastructure including storage and primary processing such as cleaning, sorting, grading, chilling, freezing etc. in agriculture, animal husbandry and fisheries sectors. The financial ceilings under the scheme are Rs.400.00 lakhs for storage infrastructure and Rs.500.00 lakhs for non-storage marketing infrastructure. The eligible beneficiaries are Individuals, Groups, Registered Farmers Producer Organisations, Partnerships, Proprietary firms, Companies, Corporations, Cooperatives, Federations of Cooperatives, Autonomous Bodies of Government and Panchayats. The sub-scheme, Agribusiness Development through Venture Capital Assistance and Project Development Facility, envisages providing assistance to agripreneurs to make investments in setting up agribusiness projects through financial participation and providing financial support for preparation of bankable Detailed Project Reports (DPRs) through Project Development Facility (PDF) through SFAC. The SFAC would provide Venture Capital to qualifying projects on the recommendations of the bank/notified financial institution financing the project. This venture capital will be repayable to SFAC after the repayment of term loan of lending bank/notified financial institution as per original repayment schedule or earlier. SFAC would provide venture capital to agri-business projects by way of soft loan to supplement the financial gap worked out by the sanctioning authority of term loan with respect to cost of project subject to the fulfilment of the following conditions:
(i) Project should be in agriculture or allied sector or related to agricultural services. Poultry and dairy projects will also be covered under the sub-scheme.

(ii) Project should provide assured market to farmers/producer groups.

(iii) Project should encourage farmers to diversify into high value crops, to increase farm incomes.

(iv) Project should be accepted by banks/notified financial institutions for grant of term loan. The quantum of SFAC Venture Capital Assistance will depend on the project cost and will be 40 per cent of the promoter's equity or Rs. 50.00 lakhs whichever is lower for NE Region.

4.5: Kisan Credit Card (KCC)

Kisan Credit Card is an effective credit delivery mechanism to ensure provision of timely and adequate credit. Recognizing the importance of issue of KCCs to the farmers for increasing the flow of agricultural credit, the target for issue of 8500 KCCs was fixed for all banks in the State during 2012-13, against which only 1661 cards were issued (about 19.5 per cent) as on 30 September 2013. The cumulative position of KCCs issued by the banks as on 31 March 2013 stood at 34211 with a cumulative sanctioned loan limit of Rs. 10159.71 lakh. However, there is very good scope for covering the remaining eligible farmers under KCC in a time bound manner. The SLBC in coordination with the State Government has devised a common format for issue
of Land Possession Certificates to farmers by Gaon Burahs (village Heads) to facilitate issue of KCC. The GOI and RBI have advised the banking institutions to take steps for coverage of eligible farmers who have not benefited from KCC. The KCC norms have been revised to include the incidental requirements of the farmers as well as their consumption expenses. Banks, which are on CBS platform, can now provide value added services to the farmers like ATMs, ATM cards, mobile banking, etc. along with KCC. The State Govt has announced zero interest KCC programme for deserving farmers to improve their access to bank credit for seasonal agricultural operations. Banks can avail of this opportunity to popularise KCC among the farmers in their areas.

4.6: Recent Developments

The annual plan for 2013-14 of the State was to bring more area under cultivation, improve production and productivity, facilitate transition from mono cropping to multiple cropping, technology transfer and strengthen marketing network. Major programmes undertaken during the year included.

i. Development of rice-based cropping system on the basis of agro-climatic divisions in the State.

ii. Bringing more area under wheat in some of the selected regions, which have potential.

iii. Introduction of contingency crop production programme in areas which are prone to natural calamities.
iv. Identification of cash crops such as potato, ginger, oil seeds, seasonal vegetables, various spices etc and action plan for enhancing production and productivity of these crop varieties.

v. Importance to creation of post-harvest infrastructure In order to improve shelf life of the perishable produces.

There is growing emphasis on quality seed production and adequate storage facility for seeds (In view of high level of humidity).

4.7: Issues in agriculture

(i) The scope for bringing more arable land under cultivation is limited. Therefore, it is essential to improve productivity of major crops by bringing more area under HYV crops, improving SRR of major crops like paddy and maize through suitable seed production programme involving varietal replacement, adequate availability of quality HYV seeds suitable for agro-climatic conditions, setting up of adequate seed storage facilities etc. At the same time, it is also necessary to increase cropping intensity and bring more area under cash crops & oilseeds through area expansion and crop diversification for ensuring higher return on investment.

(ii) There is a need for post-harvest management in agriculture sector such as provision of scientific storage, processing facilities, transportation, and marketing infrastructure etc.
Awareness creation assumes importance for promotion of various GoI schemes in this context.

(iii) Commodity trading in agriculture is on the rise in India. There are three Multi Commodity Exchanges, which handle future trading in a large number of agriculture and industrial commodities. It is essential to create awareness about the concept among farmers, who will stand to be hedged against future price fluctuation of their produce. Besides, promotion of scientific storage facility to preserve the quality of the produce is a prerequisite for growth of commodity trading in the State.

(v) The agriculture extension services have to be strengthened at both district and block levels to improve supply of quality input, facilitate adoption of modern methods of farming and post-harvest management.

4.8 Projections for Short term credit for the year 2014-15

Considering the potential, infrastructure available, likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential is assessed at Rs. 10249.56 lakh for the year 2014-15. The State is blessed with immense water resources. It has two major basins within which it has 6 sub-basins, 19 catchments, 108 sub-catchments and 335 watersheds. Many rivers and streams crisscross the State uniformly and there is ample scope for using the available water resources for irrigation purposes as the
industrial demand for water is very less. Farming with assured irrigation is one of the critical inputs for weaning away the tribal farmers from primitive shifting cultivation practices. It would also help in making agriculture a sustainable economic activity of the State by enhancing productivity and maintaining the ecological balance. The undulating topography of the State limits the scope for major and medium irrigation projects. Even the irrigation infrastructure created so far is prone to damages due to geological fragility and extreme rainfall pattern of the region requiring additional funds for special repair and maintenance of these assets. Thus, the prudent way to improve irrigation facility is to create minor irrigation structures.

4.9: Irrigation Status

The Net Irrigated Area forms only 47175.25 ha, out of the total Net Sown Area 173471.83 ha, (State as per the Agricultural Census 2000-01). The Draft Annual Plan of Arunachal Pradesh mentions that against 3.35 lakh ha. net irrigable area (4th Minor Irrigation Census), the anticipated irrigation potential created till the end of 11th FYP was hardly 1.40 lakh ha (Source: Annual Report 2010-11, WRD, GoAP).

The State is availing benefits of the Accelerated Irrigation Benefit Programme (AIBP) for minor irrigation and flood control measures. The irrigation projects once completed are handed over to the beneficiary farmers, who manage the normal operation and maintenance works. There is immense
opportunity for exploitation of Ground water for irrigation, as the Ground water level in the State is in the safe zone. As per the estimates, about 50000 ha area can be brought under irrigation through ground water development. The State is promoting deep tube wells for irrigation with assistance from the Central Sponsored Scheme for Strengthening of Surface and Ground Water for minor irrigation. The State encounters problems of landslides in higher altitude belt, landslides coupled with bank erosion of valley regions in the middle belt and bank erosion together with flooding problems in the foothill belt.

4.19.1: Issues

i. There is a necessity to promote Water Harvesting Structures in the regions receiving adequate rain where storage of rain water for irrigation purpose is feasible.

ii. Adequate supply of uninterrupted power as well as availability of diesel is necessary for energisation of pumpsets. Similarly, awareness about the solar energy operated pumpsets can be created to circumvent the problems of energy availability.

iii. The State has good potential for cultivation of various vegetables and horticultural crops in some pockets. Thus, there is a necessity for popularisation of Drip/Sprinkler irrigation systems. Agencies like Jain Irrigation System already have presence in the State, who supply cost effective drip & sprinkler irrigation systems even for
smaller landholdings. Subsidy for irrigation is available under Macro Management in Agriculture.

iv. There is also a need for acquisition and deployment of drilling machines and rigs for irrigation purposes.

v. The Water Users Association (WUA) are being formed under Society’s Registration Act in recent years. The schemes under Command Area Development & Water Management (CADWM) are being implemented through the participation of these WUAs. However, the State is yet to have Water Policy, Irrigation Policy / Participatory Irrigation Management (PIM).

4.9.2: Suggested Action Points

Government

i. The State needs to enact the Water Policy and Irrigation Policy which would provide directions for development of water resources in the State.

ii. Govt. line departments may provide suitable guidance to the farmers about land water management. More number of training and capacity building programmes may be imparted for irrigation water management, participatory irrigation etc.

iii. The extension work needs to be strengthened and supply of necessary inputs for establishment of irrigation structures as well as proper technical guidance and maintenance support may be ensured.
Banks

i. Banks need to prepare suitable bankable schemes for financing minor irrigation systems. They may coordinate with the agencies for installation and operation of the systems in the farmers’ fields.

ii. Banks also need to either place personnel from suitable discipline or put in place a mechanism for appraisal of irrigation projects received by them for financing.

iii. Banks may make efforts for popularisation of irrigation structures that are suitable for crops grown in the region.

4.9.3: Projections for the year 2014-15

Considering the potentials, infrastructure available, likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential assessed at Rs 177.65 lakh for the year 2014-15 as detailed in Annexure I. The State has an elaborate plan to promote irrigation. Some of the measures are as under:

i. Efforts to complete expeditiously the on-going irrigation projects and initiate new schemes in potential areas.

ii. Promotion of suitable irrigation systems such as drip and sprinkler irrigation for orchards, vegetable gardens and tea plantations and exploitation of ground water in foothills.

iii. Maximising utilization of created potential and upkeep of irrigation potential through people’s participation.
iv. Identification of flood prone areas and initiation of comprehensive flood management measures.

Under the National Mission on Micro-Irrigation, farmers are assisted in installation of Micro irrigation structures like Drip/Sprinkler Irrigation etc in their gardens to enhance the production. In this scheme, 50 per cent assistance is provided by GoI, 10 per cent is provided by State Govt and 40 per cent is farmer’s contribution. Ground water survey has been conducted and the water level has been assessed. Similarly, under Accelerated Irrigation Benefit Programme (AIBP), Minor Irrigation structures are being promoted on a cluster basis. The construction of river embankments, spurs, guide bunds etc. are some of the measures undertaken by the State to protect damages to crops, livestock and ensure surface transport in flood prone regions.

4.13: Land Development

The land mass of the State is comprised of small and high mountains. It receives high rainfall for almost 6-7 months and the huge volume of run-off water causes soil erosion and diminishes the fertile top soil in many places. It also causes flood havoc in the foothills as well as the plain areas of the State. Thus, it calls for appropriate treatment in the upper catchment areas that may restrict the silt and its adverse consequences. There is scope for land development activity on the terrace lands (other than high mountain area) having 5 to 10 per cent slopes. Main activities suitable for these landscapes are construction of terraces, protection of agricultural land, treatment of agricultural
land, afforestation etc. The following soil & moisture conservation measures may help improve land fertility and have scope for credit absorption.

<table>
<thead>
<tr>
<th>S.N</th>
<th>Purpose</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Soil and Water Conservation</td>
<td>Contour bund, contour trenches, retaining wall, check dam etc.</td>
</tr>
<tr>
<td>2</td>
<td>On Farm Development</td>
<td>Land leveling, bunding, construction of irrigation/drainage channels</td>
</tr>
<tr>
<td>3</td>
<td>Farm Fencing</td>
<td>Fencing with barbed wire, stone fencing or live fencing</td>
</tr>
<tr>
<td>4</td>
<td>Composite Farm Development</td>
<td>Land leveling, bunding, compost making, improved farm implements, fencing, water harvesting structure along with distribution system</td>
</tr>
<tr>
<td>5</td>
<td>Innovative/Capital intensive activities</td>
<td>Green house farming, biotechnology, hydroponics, bio-fertilizer, bio-pesticides, mixed farming, etc.</td>
</tr>
<tr>
<td>6</td>
<td>Organic Farming</td>
<td>Bio-fertilizer, bio-pesticides, market oriented cultivation of organic produce.</td>
</tr>
</tbody>
</table>

4.10.1: Initiatives by the State

The Rural Works Department, the nodal agency for soil and water conservation activities in the state, has taken up a number of measures under this sector. Some of these works are land development by terracing at hill slopes, bunding on lands with moderate slope, land protection with engineering structures such as wire cratered boulder spurs, guide walls, etc., also vegetative measures of conservation. The department also executes land development/land reclamation and land protection work to bring more land under agriculture and protection of agricultural land from erosion. Under this programme, land is reclaimed mostly in degraded marshy land by drainage works. Suitable flat land in hilly areas and valleys are developed for permanent cultivation by
land leveling and bunding. Similarly, terraces and graded bunds are made on gentle hill slopes so as to provide permanent cultivable lands. The terraces and bunds are being promoted to wean people away from the practice of jhum cultivation.

Command Area Development and Watershed Management are looked after by Water Resources Department. There are many projects under implementation in the ambit of Integrated Watershed Management Programme (IWMP) in the State.

4.10.2: Suggested Action Points

- Following action points are suggested to increase credit flow to land development activities in the State:

**Government**

i. Reclamation of problem soils by motivating farmers.

ii. Formulation of credit linked area specific schemes in the watershed areas that are already developed through the concerned departments and endeavour to implement them through banks.

iii. Utilisation of traditional locally available knowledge in soil and water conservation and its documentation.

iv. Adoption of participatory approach for watershed development.

v. Establishment of Infrastructure facilities such as lab for quality control/ certification of organic produce to encourage organic farming.
vi. Popularising use of quality organic inputs.

vii. Involvement of PRIs and NGOs to create awareness among the farmers and popularise land development and soil conservation activities.

Banks

i. Finance for land reclamation and on farm activities as a composite loan to bring more area under cultivation.

ii. Formulate schemes, in consultation with line department, for farmers who take up "On Farm Development" works such as land leveling, bunding, field channels and drainage, etc and extend financial assistance.

iii. Involvement in various land development projects being implemented by government.


4.10.3: Projections for the year 2014-15

Considering the potentials, infrastructure available and likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential has been assessed at Rs.283.94 lakh for the year 2014-15 as given in Annexure I. The sector assumes prime importance in respect of Arunachal Pradesh, which is endowed with varied agro-climatic and
physiographic regions which support a wide range of tropical, sub- tropical & temperate fruits, vegetable, spices, medicinal & aromatic plants, flowers and mushroom. The agro-climatic zone wise potential of various horticultural crops is given in the following table.

<table>
<thead>
<tr>
<th>SL No</th>
<th>Horticulture Zone</th>
<th>Suggested Crops for Cultivation</th>
<th>Potential in Ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Foot Hills and Valleys (170-915 m altitude)</td>
<td>Citrus, Guava, Banana, Mango. Litchi, Pine apple, Sapota, Jackfruit, Papaya, Plum, Pear, etc. seasonal vegetables</td>
<td>145000</td>
</tr>
<tr>
<td>2</td>
<td>Mid Hills (915-1803 Mtr.)</td>
<td>Apples, Plum, Apricot, Pear, Almond, Low Chilling Apple, Pomegranate, Olive, Grapes, seasonal vegetables for seed purposes.</td>
<td>140000</td>
</tr>
<tr>
<td>3</td>
<td>High Hills (Above 1830 Mtr.)</td>
<td>Apples, Cherry, Walnut, Chestnut, Peanut, Pomegranate, etc. off season vegetables and production of temperate vegetable seeds.</td>
<td>115000</td>
</tr>
<tr>
<td>4</td>
<td>Rain shadow area below 40&quot; annual rainfall (with wide range of chilling requirement and temperature).</td>
<td>Apple, Pear, Plum, Preach, Apricot, Almond, Walnut, Pomegranate, etc. off season vegetables.</td>
<td>31300</td>
</tr>
</tbody>
</table>

Source: [www.arunachalpradesh.nic.in/dhorti.htm](http://www.arunachalpradesh.nic.in/dhorti.htm)

4.11: Potential for Development of various horticultural crops

Among the fruits Mandarin Orange is the oldest cultivated major fruit of the state which is now being exported although in an un-organized manner due to lack of marketing infrastructure and channelization. Being the principal sub-
tropical fruit, cultivation of this crop is given top priority and thrust is laid on area expansion. Current area and production of orange is 39046 Ha and 175707 MT. It occupies 45.8 per cent of total area under fruit crops and contributes about 56.8 per cent of total fruit production. The area expansion in Mandarin Orange is being taken up in East, West and Upper Siang districts, Lohit, Lower Dibang Valley, some parts of Upper Subansiri, Papum Pare, East Kameng districts. Apple is the most important temperate fruit of the state covering about 13866 Ha (16% of area under fruits) areas with production of 30505 MT (9.8 per cent of total fruit production). Apple of Arunachal Pradesh is at par with that of Himachal and Kashmir in terms of quality and size. With the introduction of exotic varieties and dwarfing root stocks, the apple production has increased manifold resulting in marketable surplus. It is cultivated mainly in the temperate regions of West Kameng and Tawang districts and efforts are underway to start apple cultivation in other potential areas like Mechuka of West Siang, Anini and Anjaw districts. With the concerted efforts of the extension agencies, varietal improvement has taken place resulting in considerable improvement in production in the recent years. Pineapple is another important sub-tropical fruit of the state, which occupies 14 per cent of the area under fruits and contributes about 22 per cent of total fruit production. Currently area and production under Pineapple is 11925 Ha and 66780 MT respectively. As a result of area expansion programmes of the State Govt, cultivation of pineapple is undertaken in all Siang districts, Lohit, Lower Dibang Valley, some parts of Upper Subansiri, Papum Pare and East
Kameng. Kiwi is a relatively new entrant in the horticulture milieu of the state, though the State is the highest producer of this fruit in the country. Current area under Kiwi is 3027 Ha and production is 4540.5 MT. Kiwi is grown in West Kameng, Tawang and Ziro area of Lower Subansiri District. The cultivation of Kiwi is being expanded to West Siang, Lower Dibang Valley and Anjaw districts. Being a high value crop, the response of the farmers in cultivation of the crop has been encouraging. Total area under different types of spices is 16370 Ha with production of 12946 MT. Ginger and large cardamom are the two prioritized crops. Under Ginger 2450 Ha was brought under cultivation which gave production of 12250 MT during 2011-12, while large cardamom covered the area of 13920 ha with production of 696 MT. Future expandable area under Large Cardamom lies in Siang belt, Lower Subansiri, Lohit, Anjaw, Changlang, Tirap etc while ginger can be grown in large areas of Lower Dibang Valley, Lohit West, East and Upper Siang, Papum Pare etc.

4.11.1: Medicinal and Aromatic Plants

The state has high potential for cultivation of Medicinal and Aromatic Plants. Under National Mission on Medicinal Plants low altitude plants like Aquilaria agallocha, Emblica Officinalis etc and high altitude plants such as Picrorhiza kurroa, Aconitum heterophyllum etc are being propagated. The state has high scope for promoting High Altitude Medicinal Plants having high demands in Chinese and Tibetan Medicines, which can be cultivated in
Tawang, West Kameng, upper reaches of West Siang, Upper Subansiri, Dibang Valley, Kurung Kumey, Upper Subansiri and Anjaw districts.

4.11.2: Plantation Crops

The foothill areas of the State bordering Assam have good potential for rubber plantation as agro-climatic conditions of the region are suitable for the crop. Rubber Board is taking initiatives for popularization of the cultivation of the crop. Under the aegis of the Board, farmers in the region have been taken on exposure visit to traditional rubber growing areas in Kerala to increase their awareness about cultivation of the crop. The State has immense potential for tea plantation given the favourable agro-climatic conditions. Even tea gardens can help in creation of gainful employment for rural youth and women. This activity is gaining focused attention by the State Govt and formulation of a suitable tea policy is on the anvil. There is an office of Tea Board of India located at Itanagar. The State Govt is also planning to convert the Jhum lands into tea estates and provide other infrastructure support for cultivation of organic tea especially by small tea growers of the State. The introduction of commercial floriculture in varieties viz. Rose, Anthurium, Carnation and Gerbera, under protected cultivation of about 145 Ha in the state has been made through implementation of Technology Misson / National Horticulture Mission. The current production of cut-flowers is expected to be 18.4 million numbers. The cultivation of flowers in protected structures is giving lot of self-employment to young people, especially ladies. The foothill area of Pasighat, Itanagar,
Lohit, Roing etc are found to be suitable for Anthurium and Gerbera while cooler areas of Rupa (West Kameng) Khonsa, Basar (West Siang) are found suitable for rose and carnation. During 11th FYP, the state has covered about 1.08 lakh Ha under various horticultural crops and with total production of 3.65 lakh MT. The total resource utilization (of available land) has been raised to 6 per cent. Fruit sector occupies the highest area and production. Although vegetable occupies only 1.6 per cent in area, its contribution to production is about 11.9 per cent in comparision to 3.5 per cent in Spices with an area of 15 per cent. Medicinal and Aromatic Plants (MAP) is a new venture, which occupies about 4.7 per cent of total area. However, the production of MAP is in a very nascent stage. During 2011-12, the total fruits production was 3.08 lakh MT from an area of 85 thousand Ha, vegetable production was 43500 MT from 1740 Ha and spices production of 13 thousand MT from 16370 Ha of land.

4.11.3: Major Constraints

Though the state has considerable potential for development of the sector, there are a number of challenges which need to be addressed to realize the same. One of the major problems is the inaccessibility and thin distribution of population which makes extension difficult, be it in adopting improved technology/agronomic practices or in adoption of crop diversification or varietal improvement. Major constraints hampering the sector are as follows

Non-availability of quality seeds and planting material

i. Low productivity, high input costs and shortage of labour.
ii. Small, uneconomic and scattered land holdings which render aggregation of produce and market access difficult affecting price realization by the farmer.

iii. Non-availability of storage and processing infrastructure, resulting in post-harvest losses and distress sale.

iv. Lack of organized markets

v. Lack of Commercialization and crop diversification

vi. Inadequate irrigation facilities especially drip irrigation.

vii. Lack of thrust on Organic Farming

In order to overcome the above thoughtful policy, research and technological initiatives are required which should ensure availability of locally relevant technology, farm inputs, forward and backward linkages and bank credit which would facilitate higher level of investment.

4.11.4: Suggested Action Points

i. Department of Horticulture may take adequate steps to strengthen the extension mechanism and help the farmers in taking up crop diversification, better agronomic practices, improved varieties of crops so that crop production and productivity improves.

ii. Department of Horticulture may initiate necessary steps for establishment of nurseries for supply of quality planting material either in Government Sector or in PPP mode.
iii. The extension machinery of Department of Horticulture and KVKs may impart training to farmers in Value addition at farmer level to ensure increased price realization.


v. Department of Horticulture and Irrigation may initiate steps in expanding drip irrigation facilities.

vi. Department of Horticulture may promote producers’ cooperatives/collectives for collective procurement of inputs, aggregation processing and marketing of products.

vii. Non availability of Storage Godowns and Cold storages is a major constraint in the sector Department of Horticulture may initiate steps to fill this infrastructure gap by facilitating taking up of this activity by farmers’ collectives like producers; organizations, individual entrepreneurs and corporate.

viii. Department of Horticulture may promote corporate farming and linkage with user industries to ensure ready market for the horticulture produce of the state.

ix. Department of Agriculture may promote floriculture in contiguous areas using latest technologies like poly house farming and precision farming with assured market tie up.
x. The traditional horticultural practices of the state are very close to organic farming methods. With little handholding vast tracts producing horticultural crops could be covered under Organic Farming. Horticulture Department has to make efforts in this direction.

• xi. Banks may extend credit support for plantation of horticulture crops as also for nurseries, setting up of storage infrastructure for agro processing.

4.11.5: Recent Developments

Considering the potentials, infrastructure available and likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential in the sector for the year 2014-15 has been estimated at Rs3633.83 lakhs (given in Annexure-I). The Horticulture Mission for North East and Himalayan states (HMNEH) launched during 2011 is continuing in 2013-14 for overall development of horticulture. Under this programme, farmers are given assistance for creation of gardens under various crops in which inputs such as seeds/planting materials, fertilizers, plant protection chemicals, tools and equipment’s etc. are given on subsidy basis. Assistance is also given for establishment of Private and Public nurseries for production of planting materials, green house for protected cultivation etc. Assistance is also given for establishment of rural primary market, retail market and terminal markets. Other infrastructures like Collection Centres, On-farm handling units etc. are

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eligible under the programme. The programme is totally funded by GoI. Similarly, under National Mission on Medicinal Plants, assistance can be given to farmers for commercial cultivation of various medicinal plants on subsidy basis. Farmers are given assistance for cultivation of various types of bamboo species found in the State under National Bamboo Mission. Farmers are supported under Rastriya Krishi Vikash Yojana for activities ranging from maintenance of garden, tools and equipments, plastic crates etc. Besides, there is support for project based scheme under North-Eastern Council (NEC) for project cost ranging from Rs. 2 Crore to Rs. 5 Crore. Farmers and entrepreneurs can avail the benefit after detail project report (DPR) is properly approved by the State Government and prioritised for funding by NEC. The State has identified thrust areas for development of horticulture in the 12 FYP.

i. Commercialization by way of diversification of horticultural activities.

ii. More emphasis on income generation crops like spices, High Altitude Medicinal Plants, floriculture, mushroom etc.

iii. Expansion of area under horticulture with emphasis on utilisation of abandoned land, especially jhum land.

iv. Strengthened Extension & training supports.

v. Research and Development back up for location specific technology.

vi. Strengthening of nurseries for provision of Quality Planting Material.

vii. Increasing productivity and improving quality of produce.
viii. Combating the prevalence of pest and disease with special emphasis on Scab Control.

ix. Programme and Citrus Decline Management.

x. Management of post-harvest technology.

xi. Strengthening Marketing Infrastructures, Processing and value addition of horticultural produces.

xii. Stress on compact area plantation.

4.12: Development of Apiculture (Bee keeping)

Realising the importance of Apiculture as a potential income and employment generating activity as well as its indirect benefit in oilseeds, flower and fruit productivity, the State has decided to launch a new scheme in mission mode for its promotion.

4.13: Promotion of Tea and Rubber plantation

Hon'ble Chief Minister's Mission Mode Project (MMP) for promotion of tea and rubber plantation in the State is being implemented in various parts of the State. Under the mission, tea plantation will be promoted in all districts namely, West Kameng, East Kameng, Papum Pare, Kurung Kumey, Lower Subansiri, Upper Subansiri, West Siang, Upper Siang, East Siang, Lower Dibang Valley, Lohit, Changlang, Tirap and Longding districts. Similarly, Rubber cultivation is also to be implemented in feasible areas viz in districts like East Kameng, Papum Pare, West Siang, East Siang, Lower Dibang Valley, Lohit, Changlang, Tirap and Longding. Under the scheme, one time assistance
in the form of subsidy for planting materials, fencing etc. @ Rs.1.00 lakh for Tea cultivation and Rs. 80,000/- for Rubber cultivation per hectare per beneficiary is to be provided.

4.14: Forest and Wasteland Development

Arunachal Pradesh has the largest area under forest cover among states in the country. Its forest and faunal density makes it one of the 25 “Bio-Diversity Hotspots” in the world. An area of 51540 sq. kms of the state is covered with by forests. The expected annual yield of timber, cane, bamboo and resins are 74152.55 cu.m., 1,53,36,851 running Meters, 278162 (no.) and 228980 blazes. The state is the habitat of 500 species of medicinal plants. The activity could be taken up on commercial basis in districts such as Tawang, East Kameng. About 80 per cent of the plant families known in India are found in the State. The important forest types found in the state are Tropical Evergreen, Semi Evergreen, Deciduous, Pine, Temperate, Alpine and grassland etc. As per the latest available data as on 31 March 2011, the forest area in the State is as under:

<table>
<thead>
<tr>
<th>S.No</th>
<th>Type of Forest</th>
<th>Entire State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reserve Forest</td>
<td>10089.39</td>
</tr>
<tr>
<td>2</td>
<td>Anchal Reserved Forest/VRF</td>
<td>625.37</td>
</tr>
<tr>
<td>3</td>
<td>Protected Forest</td>
<td>7.80</td>
</tr>
<tr>
<td>4</td>
<td>National Parks</td>
<td>2290.82</td>
</tr>
<tr>
<td>5</td>
<td>Wildlife Sanctuaries</td>
<td>7487.75</td>
</tr>
<tr>
<td>6</td>
<td>Unclassified State Forest</td>
<td>31038.87</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>51540.00</td>
</tr>
</tbody>
</table>

Source: Directorate of economics and Statistics, Dept. of Agriculture and Cooperation, GoI
The forest resources provide the largest employment opportunity to the population of the State. Further, on account of increase in human & livestock population, insufficient infrastructure and diversion of forest areas for development activities, the pressure on forest land is gradually increasing. Several other problems unique to forestry sectors are inadequate public awareness about multiple roles of forests, low investments in forestry, inadequate people’s participation, technological weakness etc. There are 39 Forest Divisions in the State under the Principal Chief Conservator of Forest. There is a Forest Research Institute and one Forest School at state capital. The quantity and value of major forest products in the State during 2010-11 is given in the table 4.5:

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Major Forest Products</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Timber (Cu.m)</td>
<td>24176.47</td>
</tr>
<tr>
<td>2</td>
<td>Firewood (Cu.m)</td>
<td>6033.74</td>
</tr>
<tr>
<td>3</td>
<td>Cane (Kaps)</td>
<td>27200</td>
</tr>
<tr>
<td>4</td>
<td>Bamboo (no.)</td>
<td>24585</td>
</tr>
</tbody>
</table>

Source: *Statistical Abstract 2011*

The State has undertaken plantation in 5771 ha during 2010-11 for regeneration of forest cover. There is great scope for cultivation of Non-Timber Forest Produces (NTFP) like bamboo, cane, broom grass, orchids etc for economic development of the rural people given the ideal agro-climatic conditions and diverse altitudinal zones in the State. The NTFP plantations can be done in the Jhum fallows too. They can be grown as cash crop in various agro-forestry models such as the agrisilvicultural system, Agri-horti-
silvicultural system and silvi-pastoral system in the state. The State Govt periodically fixes adveloram rates for various NTFPs for sustainable development of these produces.

Efforts are required on the part of the State Government to tap the tremendous potential for Non Timber Forest Produce (NTFP) in the state by involving local communities through Joint Forest Management Committees which could take up NTFP based income generating activities by forming themselves into SHGs/ JLGs and Farmers' Clubs. There is a need to revamp the extension and support mechanism for development of cultivation of Medicinal Plants in terms of improved availability of quality planting material, tie up with user industries etc. Since bamboo is available in substantial quantity industries such as paper and rayon has potential in the state provided environmental issues are taken care of. The State has around 1404.13 sq km of fallow land, cultivable waste land and area not available for cultivation which could be utilized for regeneration of forests and the state can earn Carbon Credit as per the Clean Development Mechanism.

4.14.1: Suggested Action Points

Government

i. The State Govt may undertake measures to expand Participatory Forest Management through involvement of local communities such as Social Forestry programmes through
distribution of seedlings and ensuring involvement of local people for forest conservation, protection and regeneration.

ii. The State Govt. may actively promote agro-forestry farming system with various crop combinations involving cereals, horticultural crops, forest trees and fodder trees. Such farming system will reduce dependence of people on Jhum cultivation for sustenance.

iii. The State Govt. may also promote bamboo clusters through local, resource poor tribal community. It may also provide extension services like technical inputs and skill upgradation to the local populace to encourage them to set-up units of various bamboo products.

Banks

i. Banks may exploit the potential in forestry activities and consider financing activities such as bamboo plantation, NTFP plantation, processing and value addition units for minor forest products, etc.

ii. Banks may explore the scope for value addition of minor forest products such as honey, medicinal herbs, etc., through credit support to tribal co-operative societies.

Considering the potentials, infrastructure available, likely to be made available and based on discussions with the stake holders in promotion of the
sector, the credit potential has been assessed at Rs.243.64 lakh, for the year 2014-15 as given in Annexure I.


Rearing of livestock and poultry helps in assuring income and nutritional security to the resource poor people of the State. It has emerged as a very popular supplementary vocation in homestead farms of the marginal and small farmers as about three fourth of the population own livestock for their livelihood. Poultry farming and Piggery are age old animal husbandry activities adopted by the tribal farmers of the state to supplement their income. The livestock population in the state as per Livestock Census 2007 is 15.16 lakh as detailed in table 4.6:

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Particulars</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cattle</td>
<td>503124</td>
</tr>
<tr>
<td>2</td>
<td>Buffalo</td>
<td>3189</td>
</tr>
<tr>
<td>3</td>
<td>Goats</td>
<td>296196</td>
</tr>
<tr>
<td>4</td>
<td>Sheep</td>
<td>19889</td>
</tr>
<tr>
<td>5</td>
<td>Pigs</td>
<td>357069</td>
</tr>
<tr>
<td>6</td>
<td>Yak</td>
<td>5975</td>
</tr>
<tr>
<td>7</td>
<td>Mithun</td>
<td>219784</td>
</tr>
<tr>
<td>8</td>
<td>Horses &amp; Ponies</td>
<td>5754</td>
</tr>
<tr>
<td>9</td>
<td>Dogs</td>
<td>105286</td>
</tr>
<tr>
<td></td>
<td>Total Livestock</td>
<td>1516266</td>
</tr>
<tr>
<td></td>
<td>Poultry</td>
<td>1344219</td>
</tr>
</tbody>
</table>

Sources: Statistical Abstract 2011

The per capita availability of milk is only 42 gm per day as against the national average of 258 gm as per the Draft Annual Plan of the State Govt.
indicating substantial potential for development of dairy. Since the population is predominantly non-vegetarian there is a huge local demand for meat and eggs. Though meat production is substantial, egg production is lagging behind. Most of the livestock in the state are of indigenous stock. The State has a Livestock Policy for improving the local germplasm and enhance milk yield. The Poultry Breeding Policy of the State Govt. seeks to enhance egg production under backyard rearing system as well as large scale commercial egg production. The Breeding policy for Piggery provides for commercial farming of improved exotic purebred/crossbred pigs of proven potential.

4.15.1: Extension system

The Department of Animal Husbandry and Veterinary, Krishi Vigyan Kendras and Research Institutions of the State provide the extension support necessary for development of the Sector. The infrastructure available for veterinary services is given in the table 4.7.

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Hospital</td>
<td>1</td>
</tr>
<tr>
<td>Veterinary dispensaries</td>
<td>93</td>
</tr>
<tr>
<td>Veterinary Aid Centers</td>
<td>156</td>
</tr>
<tr>
<td>Cattle Upgrading Centers</td>
<td>120</td>
</tr>
<tr>
<td>Diagnostic Laboratory</td>
<td>11</td>
</tr>
<tr>
<td>Cattle Breeding Farm</td>
<td>11</td>
</tr>
<tr>
<td>Poultry Breeding Farm</td>
<td>11</td>
</tr>
<tr>
<td>Pig Breeding Farm</td>
<td>9</td>
</tr>
<tr>
<td>Sheep &amp; Wool extension centre</td>
<td>7</td>
</tr>
</tbody>
</table>

*Source: Statistical Abstract 2012*
Centrally Sponsored Schemes under National Programme on Cattle and Buffalo Breeding (NPCBB) and Intensive Diary Development Programme (IDDP) are in operation in the State. The cattle development scheme has components such as setting up of Cattle Upgrading Centres (CUC) and establishment of District Cattle Breeding Farms. The Arun Dairy Project which is under IDDP I, is under implementation in Papumpare District. Under this project, dairy farmers are organised into Dairy Cooperative Societies (DCS) with provision of inputs. Under the IDDP -II, the project activities would be extended to East Siang, West Siang and parts of Papumpare districts. There is a plan to form 100 Dairy Cooperative Societies by the end of the project during the XII FYP. The Arunachal Pradesh Coop Milk Producers Union Ltd. provides cattle induction subsidy, cattle feed transportation subsidy, training of farmers and free veterinary aid to the dairy (farmer) members of the respective cooperative societies under IDDP. Similarly, Rural Backyard Poultry Development scheme is under implementation in the State, which aims to assist 6000 BPL women beneficiaries by establishment of 20 mother units for raising birds for supplying to back-yard poultry units by providing interest free loans to the mother units. The Department Plans to expand the outreach of its Artificial Insemination (AI) programme during 2011-12 it has covered 2053 cows under AI programme. It has also established 3 Liquid Nitrogen Plants so far. To popularise green fodder cultivation, the Department encourages farmers to develop fodder lands by distributing fodder seeds under the Fodder Mini-kit Distribution Programme of the Central Government.
Farmers Development Subsidy Scheme of the State Government envisages provision of subsidy to the extent of 80 per cent for small piggery / goatery units and three animal diary units. Under RKVY, the State Govt. proposes to induct milch animals from other States to augment milk production. Fifty milch jersey cows and as many heifers were inducted under the programme and distributed to the Primary Milk Producers Coop Societies formed under Arunachal Pradesh Cooperative Milk Producers Union Limited. It also envisages developing infrastructure of the existing veterinary institutions thereby improving the service delivery mechanism in treatment and vaccination of animals. Intensive vaccination programme has been designed to cover at least 80% of livestock and poultry population.

4.15.2: Issues

Cattle rearing are mostly done in a scattered manner and existence of mini / commercial dairy units is very less in the State. There is an urgent need to identify traditional milk production pockets and assess the potential. Existing and potential milk farmers are to be trained about various aspects of rearing CB cows such as construction of proper sheds, concentrate feed, fodder requirement, vaccination, etc. Milk routes along with milk collection centres, bulk chilling plants at strategic locations need to be established. At present, milk is processed with traditional technology in many places to prepare Ghee and Cheese (called Chulpi) due to non-existence of milk processing units. Depending upon the production, milk processing units need to be set up.
Similarly, cooperative marketing of milk and milk products can be taken up. One of the major requirements is the availability of good quality milch animals in the State. More attention is needed for development of heifer calves. This would address the shortage of availability of milch animals in the State. Further, for development of poultry, the State Govt is planning for adequate supply of DoC and providing suitable extension services for disease control. However, support for improving the availability of concentrate feed at affordable cost, insurance cover especially for smaller units etc are vital for development of the sector on commercial lines. There is also a need to provide suitable and adequate training and extension support to the existing and potential entrepreneurs. Besides, measures are required to provide organised marketing facility for poultry products. For promotion of piggery activity, adequate supply of suitable varieties of quality piglets to the potential pig farmers is a prerequisite. Establishment of slaughter houses on scientific lines and other infrastructure for value chain management needs to receive priority. Pork products like ham, sausages etc. are highly valued. However, absence of pig meat processing centres is conspicuous in the State.

4.15.3: Suggested Action Points

Government

i. The Veterinary Department may chalk out a plan for identifying pockets that have maximum potential for development of Animal Husbandry activities and plan for intensive promotion of the activity, ensuring forward and backward linkages.
ii. Dairy Cooperative Societies (DCS) may be promoted by organising small dairy farmers. Arrangement may be made for supply of quality mulch cattle and ensure necessary extension services.

iii. The existing Cattle-breeding farms may be strengthened to ensure availability of quality milch cattle. New milk routes may be established.

iv. Value chain approach may be adopted to promote diary development by encouraging activities, viz. establishment of small/medium capacity chilling plants, collection centres, processing, grading and packaging centres etc. Further, issues relating to inadequate availability of infrastructure for transportation and marketing should also be addressed.

v. Backyard poultry and piggery may be promoted in a bigger way to ensure supplementary income and nutritional security to poor households.

vi. Availability of disease free quality Day old Chicks (DoCs) at district/block levels at an affordable cost has to be ensured by setting up of more number of hatcheries in the State preferably under Govt./Cooperative Sector. This will not only provide choice to the borrowers but will also reduce the transportation cost and the related hardships.
vii. Formation of Producer's Organisation of poultry farmers needs to be facilitated to enable farmers to realize more value for their produce through collective marketing.

viii. Pig Breeding Centres may be set up at strategic locations to ensure availability of quality piglets to the farmers.

ix. The Government may contemplate training local educated youth to provide veterinary aid such as vaccination and AI services as has been successfully done in many states of the country.

x. The AH Department - being the nodal agency for subsidy schemes of DAHD&F, GoI - may take initiative to create greater awareness about the schemes and provide hand-holding support in terms of project preparation, identifying vendors for input supply etc.

xi. Govt. may take initiative to improve the availability of quality feed in the districts. It may establish more number of Feed Mixing plants for the purpose. As the feed accounts for about 75 percent of the total cost, the Govt. may also consider distribution of cattle feed through PDS network to deserving farmers with a view to minimise inputs costs for the poor farmers.

xii. The Govt. may - through its extension network- encourage cultivation of fodder by farmers to improve the availability of roughages (both green and dry).
Banks

i. Considering the potential available in the state, Banks need to scale up their financing to the sector.

ii. Banks may provide guidance and assistance to beneficiaries in preparation of bankable schemes. Banks need to propagate and educate potential beneficiaries about the GoI subsidy schemes for development of AH Sector.

iii. Banks may support establishment of abattoirs/meat processing units under subsidy schemes of Ministry of Food Processing.

Considering the potentials, infrastructure available, likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential assessed at Rs.4239.53 lakh for the year 2014-15 as given in Annexure I.

4.16: Fisheries Development

The state has 7000 ha. and 2000 Km. of lentic and lotic water resources respectively, of which, 30-40 per cent is falling in the cold water zone of the state. The state has rich fish fauna with more than 150 fish species, with about 20 per cent representing the cold water forms and the remaining 80 per cent of cold and warm water species (source: www.arunachalpradesh.nic.in). Pisciculture is a gainful occupation in the State, which promises higher income and employment while assuring protein rich food to the rural population. It has gained popularity as an occupation for subsidiary
income for the cultivators. The fish production in the State was 3.10 Tonnes in 2011-12. The total fish ponds/farms in private sector cover about 9500 ha. Paddy-cum-fish cultivation is a popular activity, which was initially practised by the Apatanis in Ziro, and has now been gradually been adopted in other parts of the State as a viable strategy of raising earnings from traditional agriculture. The total reported area under this activity is about 1675 ha (source: Statistical Abstract 2012). State Government has identified the following thrust areas for development of fisheries in the Annual Plan 2013-14.

i. Thrust on table fish and fish seed production by creating new water bodies, rejuvenating the existing.

ii. ponds, creating a new support base for seed production along with strengthening of existing one.

iii. Introducing agro-climatic zone specific development model, introduction of zone specific culture practices/techniques and introduction of innovative schemes leading to diversification.

iv. Formation of new and strengthening of existing fish farmer groups by providing monetary, technical and consultancy support.

4.16.1: Extension System

The State Govt. promotes both warm and cold water fishery in the State through implementation of schemes for promotion of trout culture, integrated fish farming (paddy-cum-fish culture, pig-cum-fish culture and duck-cum-fish culture), construction of new and expansion/improvements of existing fish seed
farms, cold water fishery development, training and capacity building etc. The State Govt also distributes fingerlings to the fish farmers. Subsidy for excavation of new ponds through people's participation and supply of inputs is available under Centrally Sponsored Scheme and the activity is carried out through support of FFDA. There is good scope for cold water fishery that can be practiced in regions at higher elevation where temperature generally ranges from below freezing point to about 20 degree Celsius. There are two Trout Hatcheries one at Nuranang in Tawang and another at Shergaon in West Kameng District for culture of both Brown & Rainbow Trout. Another big trout Hatchery Farm is planned to be established at Samteng in West Kameng District under NEC funding. The State Govt. also provides training and capacity building support to the fishing community through assistance from Centrally Sponsored schemes such as Fishermen Welfare Scheme and Fishery Training and Extension Scheme.

4.16.2: Issues

i. The variable climatic conditions and altitudes require introduction of agro-climatic zone specific models/culture practices/techniques for higher productivity and production.

ii. The fishing operation is being carried out in traditional manner as the transfer of technology has been limited.
iii. Due to high rainfall and periodic occurrence of floods especially in the foothills, many water bodies suitable for pisciculture are lying unutilized.

iv. There is a necessity for a comprehensive programme for utilization of the large water bodies for development of fish farming.

4.16.3: Suggested Action Points

Government

i. As fish farming is being done mostly in traditional ways, the State Govt. may have to beef up extension machinery for effective transfer of technology by roping in KVKs and NGOs.

ii. Similarly, it may identify successful fish farmers and develop model ponds for demonstration to motivate the fish farmers to do the activity by following scientific farming practices.

iii. More number of fish seed hatcheries and renovation of the existing Government Seed Farms are necessary to meet quality seed requirement of farmers. There is also a need to establish at least one demonstration farm and seed bank in every potential block.

iv. The State Govt. may consider introducing an interest subvention scheme for those existing fish farmers who avail short term loan for undertaking scientific fish farming.

v. The State Govt. may continue to lay special emphasis on replication of integrated fish farming system.
vi. Modern scientific storage facilities may be put in place for preservation of fish. Similarly, modern hygienic fish markets may be established.

vii. SHGs may be provided skill development training on rearing fingerlings for enabling them to take up this as an activity.

**Banks**

i. Banks may motivate farmers to establish hatchery/nursery/fish ponds on commercial lines and ensure timely sanction and release of bank loan.

ii. Provide loans for fisheries under the overall credit limit of KCC.

**4.16.4: Projections for the year 2014-15**

Considering the potentials, infrastructure available and likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential assessed for the year 2014-15 is given in the Annexure I.

**4.17: Storage Godowns and Market Yards**

Availability of scientific storage facility in rural areas for storing farm produce, processed farm produce and agricultural inputs is a critical factor for minimizing post-harvest losses and ensuring fair and remunerative prices to the farmers/primary producers. Similarly, promotion of grading, standardisation, quality control and packaging of agricultural produce is essential for improving
marketability, prevention of distress sale and value addition. Further, pledge loan facility is available to the farmers who store their produce in such godowns and require credit for carrying on the farming activity. Therefore, it is essential to develop the right type of product-specific marketing and storage facilities at strategic locations, which are accessible to farmers. GoI has launched the negotiable warehouse receipts system, which would help farmers to gain access to loans from banks against warehouse receipts and avoid distress sale of agricultural commodities. Negotiable warehouse receipts allow transfer of ownership of the commodity stored in a registered warehouse without having to deliver the physical commodity. Warehouse receipts have been made negotiable under the Warehouse (Development and Regulation) Act, 2007 and are regulated by the Warehousing Development and Regulatory Authority (WDRA) making them eligible as collateral for loans. Small & Marginal Farmers holding KCC would get loan against negotiable warehouse receipts @7 per cent p.a for loans upto Rs. 3 lakh.

4.17.1: Infrastructure available

No statistics are available regarding the number of scientific godowns or cold storages in the State. However, the measures being considered for augmentation of production of foodgrains and fruits and vegetables will necessitate creation of storage capacity in the district. Under Gramin Bhandaran Yojana of Govt. of India, subsidy @33.33 per cent for SC/ST entrepreneurs (for others it is 25 per cent) and cooperatives is available for creation of
scientific storage facilities in rural areas (minimum capacity of 50 MT and maximum capacity of 10,000 MT). Under NHM, credit linked back-ended subsidy @40 per cent of the capital cost of project is available for construction/ expansion/ modernisation of cold storage units up to 5,000 MT capacity (cost @Rs.6,000 per MT). Further, the Government of India has accorded top priority for creation of quality warehouse facilities in the country for reducing the inefficiencies in post-harvest management, thereby addressing various issues related with food security. A sum of Rs. 5000 crore has been earmarked in the Budget for the year 2013-14, to finance construction of warehouses, godowns, silos and cold storage units designed to store agricultural produce, both in the public and the private sectors. A Warehouse Infrastructure Fund (WIF) has accordingly been set up which will utilise for financing construction of warehouse infrastructure to store agriculture and allied produce both in the public and private sectors. The salient features of the Scheme are indicated below:

4.17.2: Mode of Financial Support

NABARD will provide direct financial support to public and private sector entities by sourcing funds from WIF.

4.17.3: Eligible Institutions/ Entities

i. State Governments- by way of loans (on the lines of RIDF).

ii. Agencies owned/sponsored by the State- by way of loans (on the
lines of RIDF).

iii. Panchayati Raj Institutions- by way of loans through respective State Governments (on the lines of RIDF).

iv. Agencies owned/ sponsored by Government of India, cooperatives & federations of cooperatives, individual entrepreneurs, corporates/companies, etc.

4.17.4: Purpose/Activities

- Warehouses/ Godowns.
- Silos.
- Cold storage/ other cold chain activities like controlled atmosphere (CA) storage, reefer vans, bulk coolers, individually quick frozen (IQF) units, chilling/ freezing infrastructure, etc.
- Modernization/ renovation/ repairs of the existing storage infrastructure.

4.17.5: Priority Segments

- Food grain procurement agencies like FCI (including under PEG Scheme), Central Warehousing Corporation, State Government Departments/ Agencies, SWCs, etc.
- Panchayats, PACS and other Co-operative Societies (including modernization/ renovation/repairs of the existing warehouses) for enabling farmers to store their produce and avail concessional post-harvest loans.
- State Civil Supplies Departments/ Corporations for Public Distribution System (PDS) and supply of essential commodities.
- Private sector entities for storing food grains as well as other agricultural commodities, like pulses, oilseeds, cotton, spices & condiments and perishables, like fruits & vegetables, dairy/ poultry/ meat/ fish products.
- Special focus to be given to projects in Eastern & North Eastern States and food grain deficit States.

The State Govt. proposes to improve the marketing and supply chain logistics by undertaking the following measures under the XII FYP.

- Create adequate storage facilities in the primary and secondary markets.
- Incentivise rural youth in collection aggregation & marketing of surplus produce.
- Support to growers, aggregators in transportation of produce to primary and secondary wholesale markets.
- Promote value addition packaging & brand marketing.
- Establishment of mini cold storages (250 MT capacity) in towns / district headquarters.

4.17.6: Issues

The subsidy schemes available for creation of storage facilities need to be popularised by Agriculture and Horticulture departments. As the capital cost for construction is high, Godowns for storage of foodgrains may be constructed by
farmer's collectives/ co-operatives. Despite the erratic power supply in many places, construction of mini cold storages at strategic location is the prime requirement of the State as potential in horticulture sector is very good. As the construction can be done only on own land to derive the benefit of bank loan and subsidy, the Govt. needs to ensure smooth issuance of LPC.

4.17.7: Suggested Action Points

Government

- Adequate awareness is to be created among the farmers about the importance of scientific storage of their produce.
- Availability of Consultancy services for designing and project preparation of godown projects and repair/maintenance facilities within the state by reputed firms have to be ensured.
- Both Agriculture and Horticulture Departments may identify prospective entrepreneurs having the financial strength and resources to start construction of rural godowns/cold storage in the State through bank finance.
- Govt. may consider setting up of Farmers Markets, which facilitates direct interface of farmers with the consumers avoiding middlemen.

Bank

- Pro-active role of banks/branches in creating awareness about various subsidy schemes for godowns/cold storages and mobilising farmers/entrepreneurs.
• The banks may identify prospective entrepreneurs and encourage them to construct cold storage and rural godowns.

• Banks may also facilitate financing of godowns/cold storages by assisting the promoters in meeting the requisite formalities.

4.17.8: Projections

Considering the potentials, infrastructure available and likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential had been assessed at Rs. 1124.60 lakh for the year 2014-15 as given in the Annexure I.

4.18 Renewable Sources of Energy and Waste Management

In the wake of fast depletion of fossil fuels and the ever increasing demand for energy there is an urgent need to tap renewable sources of energy. There are a number of non-conventional sources of energy such as solar energy, water energy, wind energy, bio mass energy, energy from Oceans and tides, bio fuels etc. Realizing the importance, Government of India has established a separate Ministry of New and Renewable Energy (MNRE). The State does not have a grid of its own nor does it have high voltage transmission lines. Moreover, the task of electrification is very difficult given the topography with low density of population and scattered pattern of habitation. Most of the villages are situated in the remote and inaccessible areas where laying of transmission and distribution lines is very expensive. Unavailability of
adequate energy is a major factor for slow pace of industrialization in the State. In this scenario, energy demand of the State can be met partially by exploitation of renewable sources of energy such as biomass power generation, solar & wind power generation, small hydro power projects etc. The position in respect of Biogas Plants, Solar Lighting, Solar Cookers, and Improved Chullah etc. is indicated in table 4.8.

<table>
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<tr>
<th></th>
<th>Source</th>
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<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>Solar Lantern</td>
<td>14433</td>
</tr>
<tr>
<td>3</td>
<td>Solar Home Lighting System</td>
<td>10349</td>
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<tr>
<td>4</td>
<td>Solar Street Lantern</td>
<td>1271</td>
</tr>
<tr>
<td>5</td>
<td>Solar Dryer</td>
<td>1120</td>
</tr>
<tr>
<td>6</td>
<td>Solar Distillation Plant</td>
<td>161</td>
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<tr>
<td>7</td>
<td>Solar Water Heating System</td>
<td>33000</td>
</tr>
<tr>
<td>8</td>
<td>PhotoVoltaic Pumping System</td>
<td>18</td>
</tr>
<tr>
<td>9</td>
<td>Family Type Biogas Plants</td>
<td>2607</td>
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<tr>
<td>10</td>
<td>Biomass Gasifier</td>
<td>13</td>
</tr>
<tr>
<td>11</td>
<td>Improved Chullah</td>
<td>28494</td>
</tr>
<tr>
<td>12</td>
<td>High altitude Chullah</td>
<td>265</td>
</tr>
</tbody>
</table>

Source: Statistical Abstract 2011, GoAP

4.18.1: Infrastructure available and plan

Arunachal Pradesh Energy Development Agency (APEDA) is the nodal agency for implementation of all the programmes connected with generation of power by use of non-conventional sources. Electrification of remote villages is being done through Solar Home Lighting systems under Remote Village Electrification Programme. Villages in border areas are being electrified under PM’s package. The National Biogas and Manure Management Programme (NBNMP) is being implemented in the North-Eastern Region (NER) States
through State Government Departments/ State Government Agencies. The Khadi and Village Industries Commission (KVIC) is also implementing the programme in the State. MNRE had announced special initiatives to meet energy requirements of border villages in Arunachal Pradesh in January 2008 and January 2010. Under the plan, 1483 unelectrified border villages in the State were to be electrified through solar power and small hydro power projects. 425 villages were to be electrified by completing the on-going small hydro power projects by the Department of Hydro Power Development (DHPD), Govt. of Arunachal Pradesh. Balance 1058 villages were to be electrified / illuminated from small / micro hydel projects and solar photovoltaic systems.

4.18.2: Issues

Creation of awareness about solution to energy problems through use of cost-effective solar applications, family type Biogas plants etc. is the most important. Sensitisation of bankers about the need for financing to such units is also another essential intervention required for development of this sector. The Jawaharlal Nehru National Solar Mission (JNNSM), which provides benefit to the ultimate consumer with 40 per cent subsidy, needs to be propagated by involving District level extension machinery. MNRE approved dealers in solar applications are to be roped in to facilitate bank financing and demonstrating uses of solar applications.
4.18.3: Suggested Action Points

Banks

- Banks may enhance financing for the activity.
- Financing of bio-gas plants may be integrated with mini commercial/community dairy units.

Government

- Demonstration units may be set up by APEDA for popularization and creation of awareness about the use of cost-effective solar and biogas models.
- In order to ensure availability of servicing facilities as and when needed, the beneficiaries may be imparted basic training at the time of installation.
- Audio visual aids, wall posters, hoardings, folk shows, articles in vernacular dailies, etc. may be used to promote the activity in rural areas.
- Govt. may explore ways to identify and bring more number of MNRE approved dealers for supply of solar home light system in the State.

4.18.4: Projections

Considering the potentials, infrastructure available, likely to be made available and based on discussions with the stake holders in promotion of the
sector, the credit potential assessed for the year XII Plan period is given in the Annexure I.


The state has a rich mineral base, luxuriant natural resources and tremendous potential for development of agriculture and horticulture opening further scope for value addition. Mineral resources include coal, lime stone, graphite, dolomite, marble and pyrite. Coal is found at Namchik-Namphuk in Dibang Valley as well as in Upper Subansiri and Tirap districts. Dolomite is found at Rupa and Kaspi in West Kameng district. Limestone is found in Lohit, East Siang, Dibang Valley and Upper Subansiri. The State also has a base for development of indigenous industries, which are associated with the indigenous skills and knowledge system of the tribal community and play a major role in employment and income generation. The crafts such as weaving, painting, pottery, basket making and woodcarving are found to be practiced by the people. Manufacturing activities in the State are essentially based on the forest and mineral resources of the State. In the present structural composition of the economy, manufacturing contributes only 2.06 per cent to the GSDP of the State (2009-10). The pace of industrialization is very slow due to poor connectivity, infrastructure bottlenecks coupled with limited market. Moreover, the closure of timber based industrial units following restrictions on timber operations, has left the State with hardly any medium and large scale
industrial unit. Virtually all the industrial activity in the State is now confined to small scale sector.

4.19.1: Infrastructure available and plan

There are 16 District Industries Centre (DIC) providing services and support required for development of the MSME sector. The DICs also help the local entrepreneurs in identifying suitable schemes, preparation of feasibility reports, arrangement for supply of tools and equipment etc. Besides, the State has 14 Industrial Estates with 73 sheds covering a total area of 108.52 acres. State Govt. has put in place an Industrial Policy which aims at optimum utilization of locally available raw materials by encouraging setting up of appropriate industrial units for value addition, technology upgradation, deregulating the business environment, inculcation of entrepreneurial spirit etc. The salient features of the policy are as under.

- 99% tax exemption to eligible industrial units.
- Sanctioning of an Integrated Infrastructure Development Centre (IIDC) at Bame in West Siang district.
- Industrial Growth Centre at Noglok-Ngorlung in East Siang district.
- Up-gradation of Industrial Training Institute at Roing with World Bank assistance.
- Upgradation of ITI at Daporijo, Dirang, Balinong (Miao) and Women Industrial Training Institute at Yupia.
Besides, the Policy envisages special efforts for small industries cluster development, export promotion industrial parks, export promotion zones, Special Economic Zones (SEZ), food parks, establishment of new/strengthening of existing Industrial Estates, Border Trade Centres, etc. The policy also provides for cent percent equity holding ownership of industrial units for a period of 50 years to the entrepreneurs/group of entrepreneurs/consortium of industries. Entrepreneurs can also hold the land on lease for a period of 50 years on pre-determined lease rent. In the Draft Annual Plan 2013-14 of GoAP has identified the following thrust/priority Areas.

- Revitalisation and strengthening of outlived District Industries Centres with an allocation of Rs.100 lakh.
- Conduct of buyer-seller meets in all districts, exposure cum study tour for entrepreneurs etc. to promote entrepreneurship among rural youth and development of MSME.
- Resource mapping for industrial potential in the State.
- New Industrial Estate (IE) in every CD Block. At least 10 new IEs during the XII FYP.
- Accelerating the establishment of the Entrepreneurship Development Institute (EDI) at Jotte in Papumpare district.
- Establishment of Plastic Processing Park.
- Infrastructure Development for newly created districts etc.
4.19.2: Food & Agro Processing

In view of the predominance of agriculture in the economy of the State, the scope for agro and food processing as a prospective modern manufacturing activity assumes much importance. The sector has strong backward linkage with agriculture sector and has the potential to contribute to the growth of rural income and employment. Some of the specific agro-based industrial activities are tapioca processing for production of sago and starch, ginger processing/dehydration, apple processing, processing of citrus fruits, multipurpose fruits and vegetable processing, rice mill, bakery etc. The National Mission on Food Processing (NMFP) is under implementation in the State. It envisages (i) Grants in Aids for setting up of Food Processing Industries/Technology upgradation/ Modernization/Expansion of existing units @ 33.33 per cent on plant and machineries and technical civil works subject to maximum of Rs. 75 lakhs for NE region, (ii) Grants in Aids for establishment of cold chain, value addition and preservation infrastructure for non-horticulture produce @ 75 per cent on plant and machineries and technical civil works for NE Region and difficult areas subject to a maximum of Rs.10.00 crore. The draft Annual Plan 2013-14 of State Government has inter alia proposed the following measures for development of this sector.

- Establishment of Collection Centres and Primary Processing Centres to facilitate establishment of Mega Food Park.
• Establishment of Pilot Projects on Food Processing Industries under public sector.

• Establishment of Mega Food Park and Food Testing Laboratory.

• Formulation of a growth oriented and investor friendly State Food Processing Policy with adequate fiscal incentives and provision of infrastructure development.

4.19.3: Constraints

Some of the major factors hampering the industrialization process of the State are as under:

• Due to constraints of connectivity transportation of raw materials for industrial use is a time consuming and costly proposition. Similarly, the transportation of finished and semi-finished goods to the markets outside the State is also expensive adding to the prices of the products in those places and thereby affecting the competitiveness. The industrial units therefore depend mainly on the local market, whose size is limited owing to small and dispersed population.

• Non-availability of ready industrial workforce may also be another disincentive. The extension efforts necessary for skill enhancement / acquisition of the local workers / labourers needs to be intensified to reduce dependence on costly immigrant labour.
• Development of industries requires energy. Inadequate availability of power to meet industrial requirement is another concern.

The Micro and Small industries which provide supplementary livelihood options to the tribals, have tremendous growth potential. However, the demand for these products is very low and not enough for promoting mass production. The existing marketing network does not ensure remunerative returns to the producers, which affects the viability of value addition driven by market tastes and preferences.

4.19.4: Suggested Action points

Government

• State Government may ensure that prospective entrepreneurs are provided with required permission / licence and the basic infrastructure like water, electricity, connectivity etc.

• Department of Industries may play a vital role in propagation of the incentives available to prospective entrepreneurs, identification of location specific ventures and in preparation of project profiles for all feasible activities under the sector.

• State Govt may impart training for setting up units in MSME including agro and food processing sector to the entrepreneurs and SHGs through the DRDA /DIC.
- State Government may arrange to organize more number of industrial fair/handicrafts melas/artisan melas, buyer seller meets etc. to provide more avenues for marketing of MSME products.

- State Government may make available land for setting up of R-SETIs by banks on a priority basis.

**Banks**

- All banks in the state may accord special attention to development of MSME sector and enhance financing to the new and existing units.

- There is a need to specify a limit for disposal of loan applications for Micro and Small Enterprise units.

- The banks may make use of Swarojgar Credit Card, Artisan Credit Card and Weaver Credit Cards route to make available hassle free credit to the entrepreneurs / artisans.

### 4.19.5: Projections

Considering the potentials, infrastructure available and likely to be made available and based on discussions with the stake holders in promotion of the sector, the credit potential assessed for the year 2014-15 has been given in the Annexure 4.1.

### 4.20: Other Priority Sectors

Important activities which are normally considered for bank credit under Other Priority Sectors are small road transport operators, small business and retail trade, professional and self-employed, loans for housing, consumption
loans etc. These activities provide employment opportunities to the poor and also help in accelerating the development of primary and secondary sectors.

4.20.1: Potential available

**Small Road Transport Operator (SRTO)**

The need for transport service is essential for development of trade and commerce and mobility of people. The State is well known for its places of tourist interest and witnesses arrival of good number of tourists every year. The tourist arrival is likely to grow in future with the emphasis laid by the State Govt. on better connectivity. Besides, most people in the districts are dependent on small transport operators for conveyance. Thus, financing of SRTOs has good scope.

**Retail Trade/Small business**

Retail trade and small business provides employment opportunity to a sizable section of people in rural areas. They are mostly financed under various Government sponsored programmes like Prime Minister’s Employment Guarantee Programme (PMEGP) etc. There is good scope for increasing the finance for retail trade and small business.

**Professional & Self employed**

More number of institutes are coming up offering technical education. There is a good potential for financing the technically qualified persons opting for self-employment as a career by choice.
Educational Loan

There are many technical institutes promoting vocational education as well as some management education in the state. Further, many students from the state also access higher education from outside the state. Professional/technical education in private institutions as well as higher studies being costly, the demand for education loan is gradually increasing. Loans to individuals for educational purposes including vocational courses up to Rs. 10.00 lakh for studies in India and Rs. 20.00 lakh for studies abroad also qualifies for being reckoned as a priority sector activity.

Housing Loan

Construction is one of the rising activities in the State’s economy. Housing loans up to the following limits qualify for classification under priority sector.

(i) Loans to individuals up to Rs. 25.00 lakh in metropolitan centres with population above 10 lakh and Rs. 15.00 lakh in other centres for purchase/construction of a dwelling unit per family.

(ii) Loans for repairs to the damaged dwelling units of families upto Rs. 2.00 lakh in rural and semi urban areas and upto Rs. 5.00 lakh in urban and metropolitan areas.
(iii) Bank loan to any governmental agency for construction of dwelling units or for slum clearance and rehabilitation of slum dwellers subject to a ceiling of Rs. 10.00 lakh per dwelling unit.

(iv) Loans sanctioned by Banks for housing projects exclusively for the purpose of construction of houses only for economically weaker sections and low income groups, the total cost of which does not exceed Rs. 10.00 lakh per dwelling unit. For the purpose of identifying economically weaker sections and low income groups, the family income limit of Rs. 1,20,000 per annum, irrespective of location is prescribed.

Tourism

With its rich biodiversity, breath-taking landscapes, Buddhist monuments and other cultural relics, the State has tremendous scope for promotion of eco-tourism, cultural tourism, heritage tourism and adventure tourism for sustainable generation of internal revenue, employment and income. In order to tap the potential in this area, efforts have to be made to improve connectivity, health services, water & power supply and transport services. The state government should promote hospitality business for setting up hotels and resorts through the organised sector as also through homestays, of course Government has ambitious plans for promoting Arunachal Pradesh as a major tourism destination and has introduced schemes such as Chief
Minister’s Paryatan Vikas Yojana which is a credit linked subsidy programme for acquisition of tourist taxis by unemployed youth.

4.20.2: Suggested Action Points:

**Government**

- Improvement in infrastructure viz. roads, bridges, electricity, telecom facilities etc.
- Easy and simple procedures for issuance of inner line permit to tourists.
- Development of water sports and winter sports like river rafting, para gliding, skating, etc. will attract tourists both from India and abroad.

**Banks**

- Banks may consider financing activities such as rural housing, SWRTO, education loan etc. under this sector.
- Timely and adequate credit should be ensured by banks with a flexible approach in obtaining security.

4.21: Conclusion

Considering the potentials, infrastructure available, likely to be made available and based on discussions with the stake holders like banks and matching contribution in the form of budgetary support from State government in promotion of the various sector, the state credit plan could be formulated and implemented in a time bound manner for effective outcome.
Annexure: 4.1

Sector-wise/ Sub-sector-wise Projection of credit potentials

<table>
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<tr>
<td>1</td>
<td>CROP LOAN</td>
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<td>WATER RESOURCES</td>
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<td>LAND DEVELOPMENT</td>
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<td>FARM MECHANISATION</td>
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<td>AH- DAIRY DEVELOPMENT</td>
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<td>8</td>
<td>AH - POULTRY DEVELOPMENT</td>
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<td>9</td>
<td>AH - SHEEP, GOAT, PIGGERY DEVT.</td>
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<td>FISHERIES DEVELOPMENT</td>
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Sources: Arunachal Pradesh State Focus Paper-2014-15, NABARD