

Expanding Agriculture & allied sectors

Doubling the Farmers income by 2022, Challenges and road map

India lives in villages. Almost 70% of population is rural in nature. Agriculture & allied sector are the backbone of rural economy and had played the major role in civilization process of human races and tribes. These activities provide source of livelihood to millions and the main source of food security for entire population.

Post liberalization in 1991, our economy witnessed a robust growth and was mainly concentrated in Industry & Services sectors which are urban in nature. In contrary, agriculture, which is the backbone of rural economy, received less importance & showed a dismal growth at the same time. The creation of employment opportunities and enhancing farmer's income in rural areas could not keep pace with the growth of population and demand of employment. As such desertion of villages by youths becomes a phenomenon in almost all the rural areas of our country. This resulted in reduction in work force for agriculture and other traditional micro industries in rural areas. In turn agriculture, due to its uncertain nature and risk involved, could not keep pace with the changing global scenario. It is well understood that growth in other sectors will show a high consumption demand for commodities of these rural sectors and as such there is a rising demand. Therefore to sustain our economy priority must be given to Agri & rural sectors including handloom, handicrafts, etc as it provides rural employment, poverty alleviation, in rural India that has almost 70% of our population and also to counter stress in urban areas.

In the past, strategy for development of the agriculture sector in India has focused primarily on raising agricultural output and improving food security. The net result has been a 45 per cent increase in per person food production, which has made India not only food self-sufficient at aggregate level, but also a net food exporting country. The strategy did not explicitly recognize the need to raise farmers' income and did not mention any direct measure to promote farmers welfare. The net result has been that farmers income remained low, which is evident from the incidence of poverty among farm households.

Low level of absolute income as well as large and deteriorating disparity between income of a farmer and non-agricultural worker constitute an important reason for the emergence of agrarian distress in the country during 1990s, which turned quite serious in some years. The country also witnessed a sharp increase in the number of farmers suicides during 1995 to 2004 - losses from farming, shocks in farm income and low farm income are identified as the important factors for this. The low and highly fluctuating farm income is causing detrimental effect on the interest in farming and farm investments, and is also forcing more and more cultivators, particularly younger

age group, to leave farming. This can cause serious adverse effect on the future of agriculture in the country.

It is apparent that income earned by a farmer from agriculture is crucial to address agrarian distress (Chand 2016) and promote farmers welfare. In this background, the goal set to double farmers' income by 2022-23 is central to promote farmers welfare, reduce agrarian distress and bring parity between income of farmers and those working in non-agricultural professions. To secure future of agriculture and to improve livelihood of half of India's population, adequate attention needs to be given to improve the welfare of farmers and raise agricultural income. Achieving this goal will reduce persistent disparity between farm and non-farm income, alleviate agrarian distress, promote inclusive growth and infuse dynamism in the agriculture sector. Respectable income in farm sector will also attract youth towards farming profession and ease the pressure on non-farm jobs, which are not growing as per the expectations.

Enhancing farmers income in Arunachal, potentials & challenges

Arunachal Pradesh is a land lock hilly state and there is a vast variation in agro-climatic conditions across the districts and within districts. The state is the only state in the country to have all four major climatic zones- Tropical, Subtropical, temperate and alpine. This fact necessitates proper planning for development of land based economic sectors that includes agriculture and allied sectors. The state needs a policy framework for agriculture development according to topography and agro-climatic conditions.

Agriculture is the backbone of rural economy & dominant source of livelihood and income generation for the majority of the people in the state. The present system of agriculture is subsistence in nature and people follow traditional method of cultivation with mostly local varieties in rainfed conditions.

While envisioning enhancing farmer's income at a rapid pace, we need to understand the intrinsic factors which limit the pace itself. The agricultural growth may focus on horizontal growth (area expansion) and vertical growth (productivity enhancement per unit area). Due to population growth and environmental issues horizontal growth in agricultural has come to a saturation points and has limited scope. The planning for vertical growth ie improving productivity per unit area must address the issue of pressure on soil health to sustain the growth in future.

There are few drivers of agricultural growth in the state-

1. Availability of land mass per capita is highest in the country and hence there is scope for horizontal growth of agriculture in all parts of the state especially for plantation crops.

2. The state is organic by default and hence pressure on soil is minimal at present. Growth of organic spices is very high.
3. Agriculture is mostly mono-cropping and hence enhancing cropping intensity has tremendous scope.
4. The entire tribal population are non-veg and livestock plays a major role in the customary traditions. As such livestock enterprise has tremendous scope to supplement the farmers' income.

The major issues confronting the agricultural growth are-

1. Lack of know-how of farmers- follows traditional subsistence farming practices.
2. Lack of irrigation facilities- more than 90% gross cropped area is rainfed.
3. Lack of adequate institutional credit to farmers/ entrepreneurs for commercialization.
4. Non-availability of quality seeds, planting materials.
5. Low productivity of local variety of livestock- 90% livestock is non-descript local variety with very low productivity traits. The Local production of livestock & aquatic resources can only meet 20% of the requirement. As such huge quantities of Milk, Meat and Eggs are being imported from outside.
6. Inadequate Agro-services- Lack of soil testing Lab, disease forecasting system , Artificial insemination facilities of livestock, disease diagnostics and veterinary services etc.
7. Lack of cold storage, agri mandi & processing facilities compel farmers for distress sale of commodities through middlemen. Communication bottleneck is one of the major repulsive factors for agricultural marketing.
8. Constant threat of crop failure/ livestock death due to lack of insurance coverage

Sources of Growth in Farmers' Income

Doubling real income of farmers till 2022-23 over the base year of 2015-16, requires annual growth of 10.41 per cent in farmer's income. This implies that the on-going and previously achieved rate of growth in farm income has to be sharply accelerated. Therefore, strong measures will be needed to harness all possible sources of growth in farmers' income within as well as outside agriculture sector.

The major sources of growth operating within agriculture sector are:

1. improvement in productivity per unit area
2. resource use efficiency or saving in cost of production
3. increase in cropping intensity
4. diversification towards high value crops and livestock enterprises

The sources outside agriculture include:

1. shifting cultivators from farm to non-farm occupations, and
2. Improvement in terms of trade for farmers or real prices received by farmers.

Strategy for Improving Farmers' Income

The sources of growth in output and income can be put in four categories.

1. Development initiatives including infrastructure
2. Technology
3. Policies and
4. Institutional mechanisms

Roadmap and Action Plan

The roadmap to achieve a goal of doubling farmers income by 2022 with a sustainable growth without exerting pressure on soil and environment has the following 7(seven) facets-

- a. Enhancing production and productivity of agriculture & allied sector by irrigation, technology transfer, genetic improvements, R & D etc.
- b. Diversification & integration for a sustainable climate resilient agricultural growth.
- c. Maintaining Soil health with focused organic farming practices.
- d. Post-harvest management, value addition to reduce post-harvest losses. Food processing & Market linkages to fetch more prices to farmers.
- e. Improving institutional credit & services to farmers.
- f. Insulating farmers from any probable crop failures
- g. Commercialization to create more jobs in agriculture especially in livestock sector spices which will also supplement farmer's income.
- h. Improved price realization by farmers- Farmers Producer's group & organization
1. Shift of cultivators to non-farm jobs- agro processing & agro marketing.

Activities required for achieving target of doubling farmer's income by 2022

The vision 2022 should emphasized on sustainable agricultural growth –“Sadabahar Kranti” minimizing the negatives for the environment and utilizing available natural resources optimally aiming at achieving the broad objective of doubling the farmer's income by 2022. The major policy frame works are-

Sl No	Parameters	Activities proposed to achieve the target
1	Enhancing productivity	
a	Irrigation facilities	<ul style="list-style-type: none">➤ Implementation of PMKSY to bring more area under assured irrigation.➤ State plan scheme for irrigation
b	Technology transfer	<ul style="list-style-type: none">➤ Mobile Apps for dissemination of farm information on real time.➤ More farm schools to be set up by ATMA & KVK for farmer to farmer extension.
c	Supply of Improved	<ul style="list-style-type: none">➤ Supply of good seed through existing Govt

	germ plasm & planting materials	<p>schemes</p> <ul style="list-style-type: none"> ➤ Establishment of Govt District Dairy farm ➤ Establishment of Govt Horticulture Nursery/ Rubber nursery/ Oil Palm Nursery ➤ Fish seed nursery
d	Genetic Upgradation of Livestock	<ul style="list-style-type: none"> ➤ Through improving AI facilities under NPBB ➤ Through establishing Nandishala under Rastriya Gokul Mission(RGM) for natural breeding ➤ R&D on Local goat to develop New meat breed from local high fecundity goat by ICAR
2.	Soil Health	<ul style="list-style-type: none"> ➤ Establishment of Soil testing Lab at KVK/ATMA ➤ Providing Mobile soil testing lab ➤ Soil mapping & issue of Soil Health card ➤ Promotion of organic agriculture through Paramparagat Krishi Vikash Yojna & CMs mission organic value chain development scheme
3.	Diversification & integration	<ul style="list-style-type: none"> ➤ More Diversification with horticultural crops like Citrus fruit, Papaya, Banana, spices like Ginger, Turmeric, King Chilli, Tea, Rubber and Oil palm plantation under MIDH, CMs Tea & rubber Mission, Oil palm mission. ➤ integrated Fish farming, Paddy cum fish culture,
7	Post-harvest management, value addition to reduce post-harvest losses. Food processing & Market linkages	<ul style="list-style-type: none"> ➤ Agro marketing Facilities with creation of "Block Level and District Level Mandi" & cold chain under existing schemes ➤ Incentivizing Agro transport facilities for rural youth as an employment generation activity under state plan. ➤ Post-harvest management, food processing, value addition and marketing facilities in potential sector like- Dairy, Pine apple, lemon and Litchi. ➤ Establishment of Spice Park for export of organic Ginger & Turmeric under TIES. ➤ Entrepreneurship development & incentivizing for agro processing & value addition. ➤ Agro processing in PPP mode to be encouraged/ incentivized.
8	Commercialization of agriculture as employment avenues	<ul style="list-style-type: none"> ➤ Incentivizing farmers and rural youths for undertaking these activities on commercial line as an entrepreneur especially in Broiler,

		Dairy, Piggery which generates very quick returns and has an excellent market demand.
9	Improving institutional credit & services to farmers	<ul style="list-style-type: none"> ➤ Zero % interest Krishi loan to farmers under CMs krishi loan Yojna ➤ More institutional credit & capital subsidies facilities for commercialization eg- DEEDS, EDEG(NLM) etc ➤ More extension facilities through farmer's friend, Pvt AI workers, Pranibandhu etc. ➤ Incentivizing service providers on PPP mode
10	Disease Control	<ul style="list-style-type: none"> ➤ Modernization of Vety Dispensaries with Diagnostic & logistic facilities ➤ establishment of Disease Diagnostic Lab ➤ Robust disease forecasting system with IT application & mobile apps
10	Insulating farmers from probable crop failure or loss due to various reasons	<ul style="list-style-type: none"> ➤ Implementation of fashal bima Yojna ➤ Enhance coverage of Risk Management(NLM)

Policy Intervention & framework

It is not possible to deal with policy requirements of all the activities to achieve the goal by 2022. Only few potential activities that has not been truly addressed has been dealt below which will enhance farmers income substantially and also create an environment to measure the farmers income.

1. Policy intervention for digitization of beneficiaries in agriculture sector

This policy intervention aims at digitization of integrated farmer's information in a common platform- **“Know Your Farmer”- A portal to be developed by Govt of A.P. in the web site of Finance, planning & Investment department or nay other suitable website.**

The policy frame work

1. Planning Department will develop a Farmers Portal
2. Prospective farmers will registered themselves or got registered through respective departments filling given format that captures information of farmers eg- Aadhar No, Bank account No, HH data of family background , area under cultivation, Livestock resources, Aquatic resources, other resources, present income from all sources, sector of interest in preferential manner with respective location & area.
3. Departments can only select beneficiaries whos registration in the portal has been done or otherwise before selecting Department need to register farmers in the portal.

4. Departments will upload details of schemes & assistance provided against the beneficiaries name with login credentials provided to district Heads of Departments which will be validated by director of Department.
5. Now everyone can access the data of beneficiaries and assistance received by him.
6. Monitoring will be easy. Verification of implementation through phone calls & online upload of photographic evidence against schemes provided to each beneficiaries can be achieved.

Outcome

1. It will tremendously benefit the implementation & monitoring process and ensures percolation of benefits to needy farmers.
2. Instances of getting double benefits by single beneficiaries from various departments will be checked and resources would be judiciously distributed.
3. Corruption can be checked easily
4. Online monitoring of schemes and its impact can be assessed for future use.
5. Increase in Farmers income can be assessed.

2. Policy for encouraging Broiler Farming

Broiler farming has become an important income generating avenues to entrepreneurs across the country while producing high value nutritious food required for human health. Amongst the many advantages, the main advantages of broiler farming are

- a. Space requirement is very low and size of the farm may vary from 100 birds to 1 lakh birds hence suited for all classes of farmers.
- b. Quick returns generated within 45 days from the investments. Quickest amongst all farming activities.
- c. At least 5-6 batches can be reared in a year on rotation of initial investment thus final annual return is very high.
- d. Research & development over the past few decades has transformed this farming into industry status and there is standard protocol & well defined package of practices developed for broiler farming.

In Arunachal Pradesh, there is sharp rise in the demand for poultry meat in all parts of the state due to growth in population, urbanization, modern lifestyle and nutritional awareness etc. To meet the exceptionally high demand huge quantities of broilers are being imported from outside state. An unclaimed report suggests that monthly approximately Rs 2.0 to 3.0 crores are spent by the state for importing live broiler from neighbouring Assam. The present broiler market is under the control of unregulated players mostly from outside state. The price is fluctuated at their will and hence local small broiler farmers are exploited and could not sustain.

There is a scheme to encourage broiler farming under National Livestock Mission (EDEG) implemented through NABARD. But, unlike other state, due to sparse

population, difficult terrain and risk involved with this sector the banks are not readily coming forward to finance this potential sector.

As such State Govt sponsored schemes/ assistance is needed to encourage the local farmers, especially the unemployed youths to venture into this sector which will pave the way for employment generation and production of broiler meat to cater to the demand and nutritional requirements of the state and make the state self-reliant. Govt. of Sikkim has implemented subsidy scheme on broiler and now they are self-sufficient. There is a complete ban on import of live broiler birds into the state from outside as such local entrepreneurs are immensely benefited. We can adopt this method for generating self-employment in poultry sector.

This policy is conceptualized to encourage Broiler farming by providing Govt assistance so that the potentiality of this sector is harnessed for betterment of the state and supplement farmers' income.

The concept-

The concept of the project revolves around encouraging potential farmers/ entrepreneurs to start broiler farming. The broiler farmers will be assisted for DOC & Feed up to maximum for 2000 Nos of birds per beneficiary. The Present market Rate(s) and subsidy admissible will be as in the table below-

SI No	Particulars	Market Rate (Rs)	Subsidy (Rs)
1	Day Old chick (DOC)	45.00	15.00
2	Feed (4.5 kg/bird @ Rs 33.5/- per Kg)	150.00	50.00
3	Medicine /Vaccines/ Miscellaneous costs	20.00	10.00
	Total per bird	215.00	75.00
	For 400 birds per batch	86000.00	30000.00
	For maximum 2000 birds per beneficiary	430000.00	150000.00

The beneficiaries will be provided with subsidy according to flock size on prorata basis with a ceiling limit for maximum 2000 birds (minimum 400 birds per batch).

1.2 The Annual Budget :-

(Rs In Lakhs)

SI NO	Particulars	Govt Subsidy per unit	Nos of Units /beneficiaries	Total Budget Amount
1	A broiler unit with 2000 birds/ annum	01.50	200	300.00

a. The Expected Outcome:-

Sl no	Particulars	Outcome	Remarks
A	Production Enhancement		
1	Minimum Nos of birds per batch	500	
2	Minimum batches per beneficiary per annum	5 batches	In all in all out system
3	Total nos of broilers produced after deducting 5% mortality per unit	1900 birds	400 x 5 = 2000 – 100
4	Total annual production from all units (200 units)	380000 birds	1900 x 200 units
5	Avg weight of broiler after 45 days	2.5 kg	Consuming 4.5 kg feed
6	Total broiler production	950 MT	380000 x 2.5 kg
7	Value output at current price of import (Rs 120/- per Kg)	Rs 1140.00 Lakhs	From outside state
B	Employment & Income generation per annum		
1	Investment per unit/ batch	86000.00	
2	Investment in 5 batches	430000.00	
3	Broiler production per unit after deducting mortality	1900 birds	In 05 batches
4	Avg weight of broiler	2.5 kg	
5	Total Weight of broiler	4750 kg	1900 x 2.5 kg
6	Sale proceeds @ 120/- per kg live bird	570000.00	4750 x 120
7	Annual Net profit generation per beneficiary from the unit	140000.00	(6)-(2) above

Modality

The assistance shall be available to beneficiaries as re-imburement benefits only ie- On successful rearing of flocks, assistance would be made available after proper verification of stocks by a board constituted by Deputy Commissioner. The board will certify the quantity of birds reared along with photographic evidence and bill in favour of beneficiaries would be prepared by implementing departments for drawl & disbursement to accounts of the beneficiary concern.

For this purpose, there shall be a joint current account of DC & DVO from which assistance shall be remitted to accounts of beneficiary concern.

Conclusion:

This policy expected to bring about the following changes-

- a. Many unemployed youth/ farmers will venture into broiler farming for quick income generation as a supplementary income or primary income.
- b. The state will become self-reliant in meat requirement.
- c. Many enterprises eg- Poultry feed, DOC, Retail market will come up automatically which will promote off farm income of farmers/ youths in agri sector.
- d. Will promote diversification of agriculture and commercialization of Poultry sector.

(R.K.Sharma)
Deputy Commissioner
Namsai District: Namsai