The Andhra Agric. J 67 (1): 1-6, 2020

Invited Article

Five Point Strategy for Thripling the Income of Indian Farmers

India is blessed with bountiful of natural resources with fertile soil, good rainfall, abundant solar and wind energy besides favourable climatic conditions. There is ample scope for developing India as the most modernised and advanced country in the World. Agriculture contributes greatly for Indian economy. More than 50 percent of population are directly involved in Agriculture and another 25 percent indirectly in manufacturing of agri-inputs, agril-labourers toil in the fields. India has a bigger advantage to take up certain crops and enterprises which have export potential to earn huge foreign exchange. Therefore, there is absolute need for effective planning and strategic implementation of prioritised on-going programmes also for introduction of need based new programmes for all-round sustainable development of Farmers.

There are many challenges Indian farmers are facing today. The most important one is that farming is becoming less attractive vocation as it is not a profitable enterprise. This is the reason why many younger generations are migrating to urban areas and even rural girls are unwilling to marry the youth engaged in farming.

The reasons for farming becoming less profitable enterprise are many and the most important ones are;

1 Huge post harvest losses to the tune of over 95,000 crores annually, wastages due to excess production particularly in fruits and vegetables alone runs to several trillions and even food wastages.
2. Over exploitation of natural resources particularly underground water, soil fertility, forest resources, resulting pollution and global warming.
3. Inadequate effective Extension Education System to provide timely technical knowledge and information.
4. Non-availability of skilled labour as well as timely availability of inputs.
5. Inadequate Value Addition and Processing (VAP) and complexity in the existing procedures.
6. Lack of marketing system at the grassroot level.
7. Budget allocated by both the Centre and States to the farming sector is inadequate.

Considering these strong limitations in the present scenario, the following five point strategies are advocated for the sustainable development of farmers.

Prof. K. Narayana Gowda

Former Vice-Chancellor, UAS, Bangalore
&
President (ISEE), Nagpur, India

Prof. K. Narayana Gowda was born in a remote village in Kunigal taluk of Tumkur district, obtained B.Sc. (Agri.)(1973), M.Sc. (1979) and Ph.D. in Agricultural Extension (1992) from the University of Agricultural Sciences, Bangalore. He was awarded gold medal for outstanding contribution in Ph.D.

He served the university for a period of 36 years in various important capacities, viz; Head, Krishi Vigyan Kendra, Mudigere, Farmers' Training Institute, Hebbal, Extension Education Unit, Hebbal, Professor, IFFCO Chair, Professor and Head, Agric. Extension, Project Coordinator, DBT-RBC and Dean (Agri.),and as Vice Chancellor.

Dr. K. Narayana Gowda published more than 124 research papers, popular articles, scientific bulletins, research bulletins, extension bulletins and books. He visited USA, UK, France, Spain and Pakistan to participate and present papers at International seminars. He is serving as Member in the important Committees such as Coordinator of RBCs at DBT and Member of Karnataka Knowledge Commission. Recently, he was elected as Vice -President of Indian Society of Extension Education, New Delhi for the Southern Zone. Dr. Gowda received Swami Sahajananda Extension Scientists National Award of ICAR during 2009.

1. **Generating adequate data base information and appropriate Farming Systems**
2. **Re-orienting of Extension Education System**
3. **Promoting value addition and processing**
4. **Improving marketing for farm produce**
5. **Providing the farm budget on the population basis**

Data Base Information, Farming System

Data Base information on the Consumption requirement, opportunity for Value addition and processing (VAP) besides export

Every state as well as country should have data base information on domestic requirement of food and other farm produces, existing opportunity for processing, value addition and export as well as potentiality for expansion of VAP and export. The best example is what happening for Sugarcane Farmers Tomato, Potato, Onion growers in the country over the decades is due to lack of data base information. The annual loss due to post harvest losses was more than 95000 crores as per the report published by ICAR during 2013. The study on tomato conducted by NAARM-Hyderabad that the loss in Madanapalli taluk of Chittor district of Andhra Pradesh for one month during December 15, 2009 to January 14, 2020 was 10 crores. Normally, such low prices in tomato prevail 2 to 3 times in a year, if one were to quantify for tomato which is happening for the last three decades across the country as well as for othr crops and enterprises the loss runs to several thrillions. Most majority of farmers are not aware what crops being grown in neighbouring villages leave alone far-off villages and they come to know the gravity of the problems only when there is glut in the market followed by the fall in the price. Hence, data base is the basic requirement for providing remunerative price for farmers. Keeping the production potential of each crop and other farm enterprises, the area, location and the size of the enterprise requirement has to be finalized. The strategies for crop enterprise, data base information and associated activities are indicated as below:

An estimate could be made on the total domestic requirement of the farm produces for each crops and farm enterprises with the help of nutritionists and other experts keeping regional requirement, seasonal variations and purchasing power of different consumers both for each states and the country as a whole. Current status of infrastructure for processing and value addition, storage and export could be generated by involving the concerned experts. In the process, country can have the data base information on total annual requirement of aforesaid farm produces and existing infrastructure facilities.

Procedures for Data Generation

State Agricultural Statistical Agencies (SASAs) through their network in the State can arrange for documentation of data on the area sown in a particular crop every season on weekly basis or this task could be assigned to data entry operator to be provided additionally in the office of taluk Agriculture / Horticulture Offices, other development department officials who would remain in contact with village level extension/revenue functionaries through internet, mobile services and whatsapp on day to day basis, can be utilised.

Alternatively, MPCS (Milk Producers Cooperative Societies) could also be utilized to generate data base information. There are more than 1, 64,000 MPCS in the country catering to nearly 6.38 lakh villages. Generally every farmer visits MPCS regularly for delivering milk both morning and evening. Some of the villages and farmers not covered through MPCS, the information could be obtained through other aforesaid means. A facilitator can be appointed with a nominal honorarium to generate data everyday / alternate day/weekly basis from MPCS depending upon the diversity of crops/ enterprises in a given Agro-climatic zone.

Such information generated from each MPCS can be uploaded to taluk office in turn to district, state and national level. Within next few hours, the information can be pooled at the national level on the same day. The nodal agency responsible at the state and national level on data management will validate the accuracy through satellite and other modern gadgets.

Panellists at the State and National Level

A panel of experienced experts can be identified both at state and national level to deliberate on whether the area is in accordance with the required projection /estimates. If it is in excess of area sown/ planted than required, even if there is deficit, advice by panel of experts could be given on the likely glut|deficit in the market and other post consequences. Large area of sowing may happen within few days particularly in rainfed areas. Alternative matching crops/ enterprises could be advocated with the required technical guidance keeping Agro-climatic regions/zones and support system available for such crops from the government and other agencies by these experts regularly. The deliberations could be covered by direct relay through TV followed by other print media besides timely backup by respective development departments, KVKs, Research organizations, financial and input agencies. This valuable information will help the farmer to take informed rational decisions to postpone sowing/

planting of such crops as well as to go for alternate crops/ enterprises. In this process, the area under these crops could be regulated, glut in the market desperate sale and loss could be minimized. The reliability of such information on the area can be randomly verified and updated with GIS and other latest gadgets particularly in intensive areas of selected crops. In case of Karnataka, nearly half of the area under tomato is cultivated in Kolar and Chikkaballapur districts alone. Similar strategy can be adopted for other crops where the large area is covered. The mechanism suggested can be refined to go for more precision of data collected over the years.

The budget required to generate data base information for the area regulation on everyday/ alternative days/ seasonal basis requires a meagre expenditure compared to huge losses incurred by the farmers every year. This initiative will provide a permanent solution to long term problem the country is facing to ensure remunerative price to farmers besides minimising huge losses.

Farming System Based Cropping Pattern

There are 124 Agro-climatic zones in the country. Every Agro-climatic zone is unique in terms of soil type, rainfall, temperature, solar and wind energy. The ideal crops and enterprises to be taken up depends on these features which helps in realising potential yield and quality produce, reduce cost of production, increase profit margin, facilitates assured price and payment to all the farmers as per MSP, judicious use of natural resources, improves ecology and environment, ultimately help in satisfied living of farmers.

Crop zoning can be regulated through disincentives with respect to subsidy, insurance, crop loan, MSP, market opportunity, other government facilities etc., for crop violations.

This will have positive impact on water management, nutrient management, minimising wastages, timely procurement of farm produce, pollution, global warming, pollution and other related factors.

Integrated Farming System (IFS)

The average holding of a farm family is declining year after year. The average holding per family was 3.5 ha during 1950's and in 2010, it was 1 ha. In this context, the total land holding per family will go on decreasing year after year and the best option is to promote integrated farming with required support system for all those marginal, small and medium farm families. At a time when different farming systems namely; Zero Budget Natural Farming, Organic Farming,IFS and Modern Farming are advocated, the farmers are in confusion regarding what type of farming to be adopted. All the Farm Universities of Karnataka have demonstrated IFS with 1.25 lakh farm families during 2011-2014 that IFS is a sustainable farming. ICAR through its ACRIP on IFS also given momentum to promote IFS across the country through its IFS Research Centres and KVKs. IFS meant combining of agriculture, horticulture, animal husbandry, fisheries, sericulture and forestry in different combinations to gain year round employment and continuous income for a sustainable development of farmers.

Therefore, IFS need to be promoted compulsorily to all farmers as a strategy for livelihood and ecological sustainability. IFS helps in stabilizing farm income, additional and continuous employment, minimising risk particularly under aberrant weather conditions such as drought, flood, outbreak of pests and diseases and reducing cost of production besides minimising migration of farm youth and avoiding temptation for suicide. Even if there is a failure of one enterprise, the other enterprise will come to the rescue of a farmer, particularly perennial plantations like jackfruit, jamoon, tamarind etc. The input management system is self contained to a greater extent with minimal dependence on outside inputs. This also support ecosystem through soil health management and improves family nutrition, risk bearing ability and brings in social harmony.

Ecosystem development needs to be promoted to address climatic and soil health issues, which is possible under IFS through afforestation/agro-forestry / perennial horticulture plantations. Incentives for tree planting and maintenance in rural areas may directly encourage the farmers. The on-going programs of Department of Agriculture and allied departments along with KVKs be linked for promoting IFS to every farmer.

The real crux of the problem to promote IFS is of starting of specialised Development Departments and also specialised Farm Universities across the country. The best option is to encourage every KVK (there are nearly 716 KVKs in the country) to promote IFS since team of interdisciplinary specialists are working in KVK System.

Strong Extension Education System

There is absolute need for involving multiple agencies and integrated extension approach for providing timely information on new technology, facilities available with various departments and how to avail them besides information on critical inputs, insurance, loan and other facilities for every farmer, farm women and farm youth. The necessity of extension education has become all the more important now than ever before in view of farming becoming

more challenging, complex and more diverse besides number of families are increasing. Over the years, the extension system has become weak because the ratio between extension personnel to farm families has widened in view of inadequate recruitment. Educating on the refined new cropping pattern according to agro-climatic zones is a difficult task. This type of education requires empowering on long term impact of over exploitation of underground water, soil health, effective pest and disease management, environment and ecology besides educating on disincentives. Disincentives mainly focus on withdrawal of all types of subsidy, insurance besides non availability of MSP to all those crops declared by the government. Farmers also need to be educated on integrated farming, undertaking VAP, minimising post harvest losses, harnessing renewable energy sources, organising farmers groups, agricultural labourers association, effective marketing through market intelligence, storage facilities etc.. Without a strong public Extension Education system, it is difficult to ensure sustainable development of farmers particularly small and marginal farmers who account for nearly 90% of farmers in India.

There are multiplicity of institutions working for the welfare of the farmers namely; ICAR through KVKs, SAUs, Development departments, Quasi government organisations, Financial Institutions, NGO's, Private Agencies, Input manufacturers etc. There is a poor cooperation, coordination and collaboration among these institutions resulting in duplication, discontinuity, inadequate reaching of less resourceful and needy farmers. Therefore there is need for national policy on Extension Education to bring in synergy and effective empowerment of every farmer in the country through effective functional linkages.

Promoting Value-Addition, and Processing (VAP) including Renewable Energy

Value addition and processing (VAP) to be given top most priority for all the farm produces in India. There is enormous scope for enhancing the farm income through secondary agriculture even to the extent of doubling farmer's income. This will create huge employment opportunity for rural youth and women. The export opportunity can be enhanced several folds through VAP.

Value addition and processing should be encouraged with 50% subsidy for establishing processing units to realize higher profit margin every farm produces. Existing procedures to be revised to attract entrepreneurs.

Special emphasis needs for utilization of renewable energy resources viz., solar, bio-fuel, bio-gas to reduce the dependence on petroleum products and foreign exchange. This can reduce largely environmental pollution, provide additional income and employment. These can be promoted by providing subsidy up to 90% considering their huge benefit to the overall economy of the country and in minimising global warming. The experience of Rural Biofuel Growers Association a sustainable model evolved by UAS, Bangalore, could be replicated across the country.

Multipurpose smart threshing yards with custom hire services to be established at each panchayat level initially to minimise post-harvest losses (in the recent days on road threshing is a common scenario across the country), to take up timely farm operations, improve the production and quality of the farm produces, provide employment to rural youth, besides facility could also be used for promoting rural sports, recreation and cultural facilities bringing harmony and happiness in the village life. Smart threshing yard can be promoted under NREGA with 50% subsidy and machineries through custom hiring centres under Krishi Yantradhare Program with additional budget and effective people's participation. In the second phase, it could be extended to every bigger village and thereafter to other villages in the country.

Improving market for Farm Produces

The biggest problem farmers facing is marketing. More problems are faced in the marketing of perishable commodities compared to less perishable produces. The farmer's share of consumer's payments among perishable farm produces is 33 percent while among less perishable farm produces is 45 percent. Hence, to address the issue, government has taken many measures like establishment of regulated markets, promotion of contract farming, establishing agro-based industries, improving storage based facilities, revised MSPs from time to time to achieve price stability, promoting farmers based organisations etc.. But price stability or realising remunerative price for all the farm produces is not ensured even today. Thus the efficiency of the marketing system needs to be improved.

How to ensure major share of consumer's payment to farmers is a big question. It has been said that what farmers gained from the adoption of new farm technology is being lost in the process of poor marketing system. A minimum of 20 percent of total farm produce need to be exported where India has advantage, and government need to create the required climate.

In order to avoid middleman and ensure higher profit margin to farmers, the following options can be explored:

Direct purchase by the government

Through its grass root level institutions such as MPCS

There are many farm produces which can be procured through MPCS. These farm produces are produced in small scale by many small farm holders but exploited by middleman over the years because of lack of organised arrangement.

These produces comes during different months in the year and they are seasonal, hence can be procured through MPCS in various phases. There are 1,64,000 MPCS in India spread across the country at the rate of one MPCS for every four villages. The existing facility can be used with some additional infrastructure facilities since they work two hours in the morning and two hours in the evening, relatively free during 10 AM to 3 PM.

Some minor farm produces like minor millets, niger, horse gram, biofuels and other minor farm produces which are being grown on small scale can be procured at the MPCS. This helps transparent in weighment and timely payment to the farmer and avoids the exploitation by middlemen. The procurement mechanism model evolved by UAS, Bangalore through MPCS in Karnataka on biofuels and jackfruit, benefitted 78 percent and 67 percent in the farmer's share out of consumer's payment, a model example to all such farm produces in the country in the country.

Procurement at Panchayat level

The major farm produces like rice, wheat, maize, ragi, jowar, tur, gram, including fruits and vegetables etc. coming under the purview of MSP and others grown in large scale can be procured at panchayat level with minimum overhead costs leading to evolve a self sustained system against the present system of procurement at the taluk APMC level.

Retail Gaints

More importantly marketing of perishables like fruits, vegetables, by the retails giants such as Reliance, More, Big Bazar, and other MNCs can be encouraged to participate in purchasing at panchayat level. Minimum infrastructure facilities can be created at Panchayat as well as MPCS level with local participation for smooth functioning of the proposed system.

Farmers Producers Organisations/Associations

Promotion of producers organisations which would reduce cost of production through sharing of labour, resources and purchase of inputs. This would also ensure easy access to extension network, besides paving the way for collective bargaining power in the market. Further, the FPOs can also take care off all the forward and backward linkages to realise the economies of scale through bulk handling by eliminating the middlemen.

In order to provide profitable price and enhance income to Farmers, there is absolute need for promoting and establishing Farmers Producers Organisations for individuals crops, group of crops (in some cases) including horticulture, livestock etc.. Promoting FPOs with more emphasis on grading, packing and marketing at farmers' level would help increase producer share in consumer's rupee. There is need for constant guidance, support and encouragement for sustained functioning of these institutions.

Farm labourer's Association

Achieving sustainability and viability in farm sector is important for poverty reduction and achieving sustainable development goals and for which a multipoint strategy as detailed below is expected to help in a great way.

Unfortunate part of farmers in India is lack of availability of skilled Farm Labourers to meet the present day timely farm operations while huge unemployment prevails in rural areas resulting in indiscriminate migration to urban areas. Special strategies are required to train youth and women in rural areas to provide employment opportunity to these unemployed and underemployed human resource to use them productively in farming.

In case of plantation crops like coconut, formation of associations like that of Coconut Climbers Association promoted by KVK in Tumakuru district of Karnataka helps in addressing the issue of labour scarcity and providing gainful employment to rural unemployed and underemploed youth as well as fulfilling scarcity of skilled labours in farming. The initiative has helped to realise thirty percent increase in yield and added income to coconut farmers. Similarly, the youth can be organised and trained technically, entrepreneurship capacity building, leadership qualities and communication skills relating to the major crops where there is a huge labour scarcity across the country.

- Thus, youth can be assured of employment round the year, with improved efficiency in performing the needed operations in farming, which would lead to increased income, assured employment and satisfaction with the handsome earning as well as the respect they command from the society. The coconut growers were happy because of increased productivity due to timely operations and significant increase in income.

- Therefore, there is an urgent need to debate on this strategy and promote such Associations across the country in other crops also to minimize the pressure on the non-availability of labour particularly skilled labour and to provide livelihood security for the large chunk of landless and less landed people of the country who are underemployed and unemployed.
- Introduction of insurance and pension scheme for the farm labours who volunteer to form the Associations will certainly improve their livelihood security both during risks and uncertainties in carrying out various farm operations as well as at old age. Promotion of this strategy will be advantageous to both farmers and farm labourers which is going to have direct impact on increased agricultural productivity, added income to farmers and improved food security besides assured employment and improving national income.

Budget for the farm sector

Providing adequate budget for the farm sector will facilitate continuous increase in farm productivity, improve infrastructure, absorb majority of the unemployed and underemployed people particularly people below poverty line to assured and continuous employment in rural areas besides food and nutrition security and above all satisfied living of farmers.

- More thrust need to be given for the agriculture sector in the budget allocation, since more than fifty per cent of the population is engaged in farming sector. A minimum of 25 per cent of the total budget allocation should be earmarked for agriculture. This also paves way for providing direct or indirect employment to sizeable population engaged in input as well as output sectors.
- Majority of the small and marginal farmers would not be the beneficiary of the loan waiver scheme, since they are not regular borrowers of loans from the institutional sources. Hence the benefits of such adhoc schemes may not be useful to the large number of small and marginal farmers, who largely borrow from money lenders. There is need for evolving special strategy for extending institutional sources to small and marginal farmers.
- The interest for the loans obtained from Nationalised Banks for Agriculture should not be more than five per cent looking to the banks borrowing rate from the RBI/NABARD at the prevailing CRR rate.
- Government can also think of giving production oriented incentives to farmers to promote production efficiency.
- GST has to be removed for all agri-based activities particularly inputs, farm machineries besides value added and processed products since this is going to affect farmers wellbeing directly.

CONCLUSION

There will be ample opportunities for improving the economic conditions of Indian farmers through implementing the Five point strategies. Providing profitable price to farmers produce mainly depends on data base information. Promoting farm enterprises matching with agro-climatic zones of the country would help to realise potential yield and best quality farm produce to meet local and export demand.

Promoting IFS will help to avoid most of the problems of the farmers through minimising risks and uncertainties besides ensuring nutrition security, reducing unemployment, under employment and maximising annual income of family. The biggest opportunity to minimise pre and post harvest losses as well as maximising income, improve export opportunities and creating more employment opportunities through value addition and processing.

In order to promote aforesaid technologies to increase threefold income of farmers in a span of five years, there is absolute need for strong effective Extension Education System, ensuring effective market network and earmarking sufficient Budget taking cognisance of the percentage of population involved in this sector.

Once the income of the farmers improves, it will have far reaching impact on food and nutritional security besides peaceful living of people in rural areas and country at large.