Government of Andhra Pradesh

Primary Sector Development

Experts Consultation Workshop

04 February 2015

Minutes of the Meeting

Department of Agriculture
Government of Andhra Pradesh

ICRISAT
Science with a human face

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Date: 04 Feb 2015, 0845 am to 1930 pm
Place: Conference Hall, 7th Floor, 'L' Block, AP Secretariat, Hyderabad

Participants: List attached – Annexure-1

0845–0915 am: Registration

Before the Inaugural Session: Special chief secretary, Mr. SP Tucker started informal discussion and shared his thoughts about AP Primary Sector Mission project of the State.

a) He mentioned that they are looking forward to harvest the potential of horticulture, fisheries, agricultural and other allied sectors in this mission.

b) There are huge natural resources available which need to be reallocated for example, basin water transfer from surplus areas to Rayalaseema districts, also production of organic coffee, assured marketing through establishing public-private partnership, etc.

c) We need to thoroughly think that how we can enhance the production in primary sectors. Good quality seeds and other inputs are needed to rejuvenate the AP state for example wheat production in Madhya Pradesh state and also he cited that there is 13 billion dollar fish exports to Japan; however more potential exist in AP itself to harvest.

Dr SP Wani, Director, ICRISAT Development Centre, ICRISAT welcomed all the participants in the workshop from different private companies, researchers and academic organizations (ICAR, SAUs) and development sectors (Line departments, NGOs).

a) He mentioned that the AP Primary Sector Mission is one of the seven missions of government of AP, aims to develop the state as one of top 3 states in the country by 2022.

b) In this context, government of AP is looking forward to prepare detail work plan and strategy with the help of ICRISAT and other knowledge institutes such as Acharya NG Ranga University, YSR Horticulture University and ICAR research organizations etc.

c) The strategy of this project is building up the Private Public Partnership (PPP) through science led development.

0915–1030 am: Inaugural Session

Dr Wani requested the chair, Mr IYR Krishna Rao, Chief Secretary to government of Andhra Pradesh to inaugurate the workshop.

0915–0930 am: The address of Chief Secretary of Andhra Pradesh

He emphasized that the Honourable Chief Minister of Andhra Pradesh, Sri N. Chandra Babu Naidu is targeting developments in AP through mission mode projects and among them the Primary Sector Mission is one of the missions. To achieve this, there are several issues that need to be given high priority in the fourth coming budget planning of AP.

a) Farmers are in need of greater assistance on environmental sustainable solutions from government, scientists, and agribusiness sectors starting from cultivation, innovative technologies, up to marketing products such as less use of pesticides and fertilizers, long term productivity of agricultural lands, agribusiness etc.

b) He mentioned that budgetary support is relatively less for fisheries and animal husbandry sectors despite their higher contribution in terms of income; therefore a readjustment in budget allocation has to be made based on output criteria. Fisheries have been sustained largely with individual efforts. The agriculture and other primary sectors also should have sustainable development plans to achieve food security along with income generation of the AP farmer.

c) Our approach and action should be environmental friendly and sustainable, such as prior assessment of existing yield gaps in all sectors, back and forward approach in resources allocation and returns, providing market linkages, involvement of multi-stake holders to achieve the aim of this mission.

d) It is also required to harmonize different primary sectors, converge together to take this mission forward targeting to have clear solution by the end. He mentioned example of Rayalaseema of AP for resolving various dryland issues with help of ICRISAT and state institutes but it is further required to bring more institutes together under interdisciplinary approach to cover entire state of AP.

0930–0945 am: The address of Special Chief Secretary of Andhra Pradesh

The session was addressed by Mr SP Tucker, Special Chief Secretary (Planning) and APC of Andhra Pradesh. He said that AP Primary Sector Mission is one of the 7 Missions of Swarnandhra-2029 vision to achieve the happiness index of AP farmers and to harness the potential of AP State.

a) Individual government sectors have to perform their respective roles and also collaborate with professional agencies such as ICRISAT to achieve the mission goals. In addition to this the new capacity needed in terms of human resource to be worked out to carry forward the aims of the mission.

b) He emphasized that this program comprises nearly 80 national-international and state institutes; nearly 100 students will be involved for testing various research hypothesis and making mid-term corrections in approach and practices.

c) He further provided existing production details of various commodities (for example, milk, paddy, meat, inland fish, egg, etc) and emphasized that there are huge potentials to harness by adopting science led approach and right technologies.

d) He emphasized to think and design innovative technologies as there are number of partners (research and private institutes) in country and state who can contribute in human resource development and skill development of the state (for example, Tata and Mahindra institute for skill development).

e) He also emphasized that there is need for greater scientific methods of learning such as addition of micronutrients in deficit soils, more modern farming machines to reduce labour cost, high yield seed varieties for doubling the existing productivity in the state.

f) He further stresses stakeholders need to share and contribute by formulating right technologies, knowledge and methodologies for achieving the system level out comes in this mission.

0945–1000 am: Dr SP Wani's Presentation

AP mission is a multi-disciplinary, multi-institutional partnership-based project and creates unique opportunity to showcase technologies, approaches and best practices in state of AP to benefit farmers through sustainable and equitable inclusive growth however this partnership is not so easy and all of us should learn and work together to move forward for achieving a common goal. Dr SP Wani briefed the objectives, challenges and potentials of the mission thru power point presentation and the presentation contained a) Objectives, b) Strategy of the mission, c) Why to transform, d) Can we make it, e) Transformation, f) Mission strategy, g) Need for consortium approach, h) Grow more food grain, pulses and oil seeds, i) Soil health mapping and balance use of nutrients, j) Improve soil organic matter, k) Integrated water resources management, l) Produce and process more (fish, livestock, fruits and vegetables), m) Multi-prong market and value chain, n) Digital agriculture: upgrade delivery system, o) Generate one million jobs in primary sector, p) Priorities, q) Effective governance: Policy and legal framework, r) Effective governance: Strategic option Drivers, and s) Importance of monitoring and evaluations. He also discussed some of the concerns and key ideas of the mission.

a) Since AP has long coast line there is huge potential for improvement in fishers and productivity can be doubled and also can export outside for revenue generation. The big question is market-oriented development and whether farmers can be linked to it as farmers are more vulnerable to fluctuating market prices.

b) He stressed that 62 % of AP population is dependent on agriculture for their livelihood, whereas the agricultural sector contributes 17 % to GSDP in the state, however, there is further scope for improvement in agricultural production as most of lands are fertile and farmers are hardworking.

c) In agricultural sector, we need to enhance nitrogen use efficiency (currently 40-50 per cent), water use efficiency (currently 35 per cent), through efficient use of chemical fertilizers, more use of compost and vermicomposting which improves soil organic matter. The implementations of Inclusive Market Oriented Development (IMOD), digital agriculture, support from extension, agribusiness, etc programs, ICRISAT and all partners can help to develop skills needed in value chains and generate one million jobs thru this mission.

d) He mentioned that this initiative is to be implemented as a Mission mode approach for making AP state as a model in the country

1030–0130 pm: Technical Session I

Chair : Mr. SP Tucker, Special Chief Secretary, GOAP
Rapporteur : Dr KH Anantha, ICRISAT

In this session, there were deliberations about convergence and building partnerships for impact. Mainly private sector representatives shared their experiences regarding the issue and identified the opportunities for them to participate in the Primary Sector Mission in the state. There were several representatives representing top seed and fertilizer companies, manufacturing and processing industries, NGOs, state agricultural universities, national agricultural systems, ICAR, and social science institutes participated in the discussion and shared their ideas about making AP as one of the three top performing states in the country by 2020.

1030–1040 am: Jain Irrigation Systems Ltd

Dr Dileep Kulkarni, President, Agri-Food division shared concerns, challenges and potentials that exists in agricultural sector in comparison to China and other countries.

a) He stressed that Green revolution mostly happened in irrigated areas of India, whereas huge potential also exists in rainfed agriculture of India.

b) Consumption and food pattern shifted from cereals to non-cereals food that gives us the opportunity to diversify cropping pattern towards non-cereal food crops.

c) Besides, in addition to existing distribution and storage problems, there is a gap in supply and demand of major commodities.

d) Presently, availability of crop land is declining, farm size is shrinking, low labour productivity and industries are slow in absorbing labour force.

e) Gap in GDP and GSDP increasing, productivity stagnated and contribution from non-agricultural sector like Information Technology and others increased.

Then he discussed some ideas with the aim of achieving this mission goal

i) He noted that technology is a key driver along with cropping pattern (profitability, awareness) for example, market facilitation (market openness, pricing, transparency, integration to downstream), and harvest and processing technologies, etc. While adopting technologies, due care

should be given to environmental factors along with appropriate policy support from the government. He also cautioned that global factors (Trade norms, supply-demand restrictions) also play a major role in deciding the profitability and financial stability and he quoted soybean as example.

ii) Jain irrigation Systems Ltd is a large manufacturing and processing industry. Irrigation related manufacturing brings about 70% of the total revenue of the company in which 24% from piping and 20% from food processing. It has been signed MoU with 22 agricultural universities on sharing and implementing various technologies.

iii) He highlighted that the Jain Integrated model as a unique solution for farmers. The model integrates soil, water, credit, climate, high tech inputs, humanresource and market. The climate change scenario required improved farming practices to build climate proof and precision farming through use of biotechnology and microbiology methods. Research and development with good agronomic solutions and investment ensures environmental sustainability as well as conservation of natural resources.

iv) He also expressed that modern technologies and farming practices such as small farm compatible in protected cultivation, hydroponics, aeroponics, vertical cultivation, and precision farming have to take into consideration.

v) He highlighted an exemplar initiative Project “Unnati” in AP for value chain approach in Mango. Agricultural biotechnology is useful for enhancing productivity and quality. As rainfall patterns are likely to be modified with some regions becoming more arid and others experiencing more rainfalls monsoon proof agriculture are viable. It is possible through introduction of drought resistant, higher temperature resistant varieties; using existing biodiversity for selecting genetic material which can tolerate climate change; and using high technology for protecting against vagaries of nature.

vi) As dynamics of different crops are different in each state and upstream issues vary substantially and downstream markets are more varied across the state and crops, granular assessment is needed for AP by taking crop, region and other issues into consideration.

vii) He also touched upon water resources and noted that about 85% of available fresh water is used in agriculture. Farmers in India will need a substantial rise in irrigation water supplies (an increase from current 2,700 to 4,000 BCM), which is impossible. Only 40% cultivated area is under irrigation and rest is all rainfed. Therefore, what is required is to optimize the use of existing water efficiency and enhance the productivity of water to at least twice in both irrigated and rainfed areas.

viii) He also presented potential of drip irrigation in achieving crop yields and water saving in comparison with conventional methods. About 48% of water saving is possible through adoption of drip irrigation practices. There is also possibility of drip irrigation integrating with fertiliser,

pesticides, harvesting, farming practices, etc will allow achieving high yields. It has shown good yield potential in paddy field with drip irrigation with 66% water saving, 22% energy saving with substantial yield enhancement.

ix) He also emphasised on Jain Jeevan - solar pumping and drip irrigation system using farm pond model especially in cotton system. For water use efficiency, water saving, energy saving Jain Irrigation systems Ltd has developed Integrated Irrigation Solutions (IIS) which has shown potential in bridging the yield gap, area coverage, increased irrigation intensity, water use efficiency, achieving higher benefit-cost ratio and income by adopting simple drip and sprinkler irrigation system.

x) He also stressed on assured market, avoiding price disparity, adopting modern technology for benefiting the small scale agriculture. In addition, government policies should be farmer centric, subsidies should be long term rather than short-term subsidies and targets should be increasing farmer's income.

xi) He suggested that (i) good leadership is required and leader should prioritise agricultural interventions in their own constituency; (ii) recognise agriculture as an industry; (iii) develop smart farm as demo plots; (iv) effective agricultural universities and colleges; and (v) support infrastructure.

1040–1050 am: Mahindra and Mahindra Limited:

Mr Krishnan Iyer, Head, Zaheerabad plant presented about the company profile, concerns and strategy plan.

a) He stated that the Mahindra and Mahindra company is about $16 billion company working in more than 100 countries, and exports tractors to 18 countries like USA. Mahindra and Mahindra Limited is one of the leaders in tractors making for about 22 years. This multinational group is the largest selling tractor company in the world with two strong brands – Mahindra and Swaraj. The Mahindra group delivers Farm Tech prosperity through a variety of existing and new agri-initiatives to impact the lives of farmers, enabling them to rise above their current realm of possibility.

b) Mahindra and Mahindra Group touch the lives of farmers across value chain. This starts from soil and water, farm inputs, output storage, processing output, output storage and retailing. The group supplies high quality seeds, fertilizers, and drip irrigation for increasing the productivity. They have contract farming systems in many crops cultivations such as grape, grains, pulses etc. in partnership with government of Maharashtra and also with dairy products.

c) Mahindra Group has largest markets in south India. Forty per cent of the market share is in Telangana & Andhra Pradesh. We have largest and newest Manufacturing Facility is in Zaheerabad plant.

He highlighted some of the activities that can be shared in this mission as follows

i) **Mechanization:** Bring high end mechanization, suitable to AP farmers. It requires support of incentives to improve uptake of high end mechanization. Streamlined process of subsidy delivery.

ii) **Custom Hiring:** Support to provide mechanization on rent to small and marginal farmers. Infrastructure and capital investment.

iii) **Improving Productivity:** Delivery of high quality seeds and crop care. Bringing soil testing facilities to farmers. Demo Farms. Recognition for micro nutrient labs. Support for setting up more labs.

iv) **Bringing Technology to Farmers:** Information dissemination through various sources which we have: Mahindra Samriddhi; www.Knowagri.com. channels for technology dissemination

v) Knowledge Partner of AP government.

vi) **Irrigation:** Provide drip irrigation. Knowledge and advisory to farmers. Demo farms

vii) **One Stop Solution for All Farmer Needs:** Develop Samriddhi as a model for meeting all needs of the farmer under one roof. SOPs for extension activities.

1050–1100 am: ITC Limited:

Mr Krishna kumar, Vice President, ITC Limited presented company profile, concerns and approaches in this project. ITC is an $8 billion turnover company with more than 100 yrs. relationship with farming community. This is the only company in the world to be carbon positive, Water positive & solid waste recycling. Agribusiness is the core strength of ITC with agriculture extension, research and development, sustainability focus, and marketing.

Mr. Krishna kumar expressed that AP has strong agrarian base, human resource base, and rich natural resource base. However, the sector also suffers with lack of backward integration, lack of skilled resources, and low and stagnant productivity.
Therefore, ITC suggested few key initiatives

i) Production of Integrated Pest management (IPM) chilly with better export quality (with better pricing 20% extra price) with integrated crop management practices has high importance in some regions of AP. This requires community engagements – farmers participation – value chain from production to market – custody of supplies (need not depend only on production – inputs but also market)

ii) Skill development: need for skill development centre – can we have agri-extension skill development centre one in each district for customised crop advisory coupled with ICT- based advisories based on weather condition – crop, soil, etc.

iii) Climate smart villages an opportunity for encouraging sustainability of agriculture with tank management based agriculture and integrated watershed management – drought proofing is the outcome

1100–1110 am: National Dairy Development Board (NDDB):

Dr KR Trivedi shared their existing work plans and contributions in this mission. National Dairy Development Board (NDDB) is implementing National Dairy plan- I with the aim to increase milk and meat productivity.

a) The specific objectives of the plan are 1) To help in increase productivity of milch animals and thereby increase milk production to meet the rapidly growing demand; and 2) To provide rural milk producers with greater access to the organised milk-processing sector.

b) These objectives would be pursued through adoption of focused scientific and systematic processes in provision of technical inputs supported by appropriate policy and regulatory measures.

c) Fourteen states are covered under this initiative which accounts for more than 90 per cent of the country's milk production, over 87 per cent of the cattle breed and buffalo population and 98 per cent of the country's fodder resources.

d) This initiative contributes to increase milk production by productivity enhancement through 1) Scientific Breeding Programme (genetic improvement); 2) Scientific Nutrition Programme (realise genetic potential); 3) Supplemented by increased procurement through expansion/strengthening of dairy cooperatives and new Generation Cooperatives/Producer Companies; and 4) Supported by IT-based MIS.

e) Under scientific breeding program large investment has been done on large scale cattle semen generation which aimed to generate around 100 million semen dozes to produce high genetic merit cattle and buffaloes. Production and import of high genetic merit (HGM) cattle and buffalo bulls, production of 2,500 HGM bulls and Import of 400 exotic bulls/ equivalent embryos includes. Strengthening existing Semen Stations/ starting new stations for producing high quality disease free semen doses. Incremental 51 million doses by the terminal year. Setting up a pilot model for viable doorstep AI delivery services.

f) For animal nutrition, scientific approach as feeding of milch animals to produce milk commensurate with their genetic potential and to reduce methane emission. Ration Balancing Programme will cover about 2.7 million milch animals in 40,000 villages and under fodder development, production of 13,000 tonnes of certified/ truthfully labeled fodder seed and 1,350 silage making/ fodder conservation demonstrations.

g) Village-based milk procurement systems for weighing, testing quality of milk received and making payment to milk producers. 23,800 additional villages to be covered and 1.2 million additional milk producers.

h) For Andhra Pradesh, animal breeding program in Chittoor district with cross breed bull production and Guntur and Krishna for animal nutrition. Semen station produces approximately 3 million doses.

i) For enhancing productivity and profitability genetic improvement program, nutrition, healthcare, management, skill development and market access at farm level is necessary. Similarly at industry level, Institution building, Policy support, Legal support, IT infrastructure and HRD strategies to develop efficient industry; raise income of industry stakeholders. Altogether it will enhance contribution of dairying to GSDP; enhance employment.

1110–1120 am: NUZIVEEDU Seeds Private Limited

Mr M Prabhakar Rao highlighted the strategies for the mission such as Seed production hubs and insurance models: agro climatic regions for seed production of various crops. Need of promotion of seed production in suitably dry areas of Rayalaseema. Design and model seed grower insurance schemes – financial security and income stability.

a) Quality, value based interventions and rice-based system: It is necessary to have market linked varietal rice for strengthening rice economy of the state. In total rice area 75% of area is under irrigation and 50% of this area is under mega rice varieties

b) Crop management strategies: Direct seeded rice is one of the best crop management approaches to eliminate puddling and transplantation cost in rice system. It saves 50% of seed cost and 30% saving in overall water and electricity. Similarly high density planting in cotton is one of the crop management system to be promoted thru a value chain integration approach

c) Crop diversification strategies as per watershed networks and also detailing enterprise integration models for both rainfed and irrigated areas as value chain approach.

d) Smallholder centric transformation of agri-food chains in AP

e) Producer driven supply chains with standards/quality support system for fruit and vegetables with PPP.

f) Design of comprehensive package of cotton value chain integration initiative – Seeds, agri-extension services - procurement support – enabling warehouse.

g) Mechanisation initiatives – seed planter for seed- harvest aid –pickers (cotton)

h) Warehousing and integrated Logistics.

1120–1130 am: The Marine Products Exports Development Authority:

Mr Elias Sait, Secretary General, Marine Exporters Association said that the marine sector contributes around 40% of exports. Cultured shrimp production was 2,51,000 million tons during 2013-14.

a) Potential of AP by 2020 is in the following areas: 1) Farming area will be 50,000 hectares; 2) Production of cultured shrimp 5,00,000 tons 3) Export Value will be Rs.25,000 crores and 4) Employment will be 3 million.

b) SWOT analyses highlighted some weaknesses such as lackadaisical approach of the government inter-ministerial and inter government difference, shortcut taken by the primary producers, lack of will and mechanisms of the regulatory authorities, irregular, and deficient power supply, and multiplication centres of broods stock not yet permitted to be established.

c) Huge scope exists as AP contributes about 60% of total marine product in India. And can establish as a leading state in aquaculture production. AP can reach 25,000 crores by 2020 annual export almost largest producer in the world. However, clarity in the definition of the different Govt. organizations, particularly a clear demarcation between MPEDA's developmental role and agricultural ministry's role in monitoring aquaculture.

d) Antibiotics usage to be banned for shrimp aquaculture and hatcheries; errant farms and hatcheries using antibiotics to be penalised / deregistered; disease surveillance programme to be implemented by the ministry of agriculture.

e) Brood stock multiplication programme to be sanctioned for private sector licensing; hatcheries to use only imported SPF broodstocks or from multiplication centres, when they come into existence; hatcheries using pond-raised brood stock to be decertified and licenses cancelled; and hatcheries operating without registration should be destroyed and owners should be prosecuted.

1130–1140 am: Directorate of Oilseeds Research (DoR):

Dr KS Varaprasad, Director (DoR), emphasised on translational and adaptive research. He highlighted some of the concerns and issues as follows

a) Primarily, seed is the stumbling box as there is a competition my variety or other variety versus best varieties. Water scarcity is another major issue that needs crop diversification with alternate profitable oilseed/ pulse crops for rabi paddy area (2-5 lakh ha), situated in canal tail end and non-canal irrigated areas. Low water use efficiency can be tackled through introducing micro irrigation and low cost technologies. Nutrient Use Efficiency (NUE) through farm level adaptive research.

b) Brand building for AP products (rice/millets/ sesame/groundnut/coco/ safflower) is very critical areas to gain popularity as well as develop the confidence among producers along with value addition to Castor, Millets by involving IICT, ICAR, ICRISAT and ANGRAU.

c) Information, Communication Technologies (ICTs) through digital platform at farm level to access direct market is required. Contingency Seed Bank; Soil conservation, improving of health of coastal belt (mangroves) are very essential to develop AP as a model state in the country.

d) Contingency Seed Bank for oilseeds and pulses with the help of ANGRAU – Nandyal. Livelihood Integrated Farming System using University of Raichur 100 Model Farms in AP.

e) Smart Sensor-based Model Farms – 25 Large Common models to promote consolidation of land holdings. Mechanization with 100 Custom hire/ service centers- seed hubs to be linked initially.

f) Dr. Varaprasad also highlighted that under agriculture skill development initiative 1 lakh youths will be trained with the help of National Missions, CABI, Professional Associations, NGOs, ITC.

g) Central Composite Agriculture University is a need for basic and strategic research. Funding through partnerships with international, national, farmer cooperatives, industry and national missions for adaptive research.

1140–1200 pm: Volunteers presentations

MPEDA: Mr N Ramesh, Director (Marketing)

a) Most entrepreneurial farmers in AP made India proud in the world. They work with traditional knowledge and less support and with no power, no finance, no insurance coverage. However, favourable market conditions have been established in recent 2-3 years which provides the confidence among fishing community. Process oriented, cold chain facility is been provided.

b) There is need to diversify our basket of products; 50% of production from cultured shrimps and shifting from freshwater to Tilapia species.

c) Education institutes can conduct skill development trainings to farmers in the farming sector. Look for new innovative methods such as start with new species, few hatcheries on public private mode, cluster based aquaculture farming, etc. in total area of 17,000 ha. Small scale farmers need to be brought under this cluster based approach.

d) With Tata Institute of Social Science (TISS) farmers are being trained to develop the habit of book keeping. Processing and export is supported with e-auction. Most importantly, we are in process of developing leasing policy for community water bodies with organised financed from banks. The purpose is to evolve from benevolent to profit oriented department. Farmers have high level of expectation; amenable to global export condition; required advisories from research organisations.

Nagarjuna Fertilizers and Chemicals Ltd:

Dr Nanda Ranvir Sain, Senior Advisor to Chairman & Managing Director emphasised that his company's strength is to find complete farming solutions which will be attracting farmers with complete solutions at one place. In India, low and stagnant productivity is the cause of concern and has low arable land compared to China. In this situation, how to bridge the yield gap?

a) He suggested that this can be achieved thru sustainable farming system with integrated practices which includes 1) Better seeds; 2) Customised nutrients (India uses 500 million tonnes extra urea annually), which is wasteful expenditure; causes pollution, spoils health of the soil as well; 3) Innovative nutrients which increases carbon content is required; 4) Water management thru micro irrigation with water soluble fertilizers – fertigation can be effective tool for improving the productivity (use efficiency of fertiliser is only 20%, with fertigation it can go up to 95%); and 5) IT enabled services in local language (eg. Cotton yield has increased due to atomization system).

Bayer Crop Science:

Mr Ajeet Chahal, Senior Manager & Head of Business, Unit shared his views

a) As extension is critical and that has to be strengthened as cited by Dr SP Wani on strengthening the extension system. For example, extension of technology, demonstration in selected farmer's field in other states like Uttar Pradesh, Bihar.

b) He observed that 15-25% incremental yield if new technology adopted thru large scale demonstrations.

Hi-tech Seeds:

a) Mr Muralidhar Gupta, Senior Director- Business Development, Sehgal Foundation highlighted the role of hybrid cultivars in increasing crop productivity. He cited an example of Hybrid 3201 grain sorghum for kharif and late rabi with 15-20% higher yield compared to other hybrids in dry and irrigated area and no problem found in marketing due to high demand.

b) Sehgal Foundation is champion in developing integrated village development model and in coastal AP the Integrated Village Development Model is implemented.

BASIX:

Ms K Vasumati, Vice President, BASIX gave an introduction of her organization which is working on various livelihood issues.

a) She highlighted the work of BASIX in linking milk producers with market, which includes 1) The surplus milk was linked with bulk milk cooler; 2) Promotion of SRI paddy for enhancing WUE in Srikakulam. She highlighted an important aspect of Farmers' Producers Companies which are successful in parts of the country and BASIX is going to start these companies in Vijayanagaram district.

b) She also recommended that as capacity building is poor, green skills certified professionals are trained to act as extension workers with regular trainings.

Institute of Public Enterprise:

Dr RK Mishra, Director, Institute of Public, Osmania University, Enterprise highlighted the importance of social sconce organisation in training, research and

development initiative and expressed that PhD students can involve in conducting research on certain issues to support development initiative.

Acharya N G Ranga Agricultural University (ANGRAU):

Dr Padmaraju, Vice Chancellor, ANGRAU, shared his thoughts as

a) Rice is major crop and farmers in about 24 lakh ha uses variety released by ANGRAU long back but there is huge improvement is possible.

b) 10 million ha of India occupied by 4 mega varieties (Sona masoori, Swarna, etc) Modern technology and brand image became very important for marketing.

c) Waterlogging is the serious problem in coastal Andhra Pradesh and the new variety has to withstand 180 km speed and logging as well. Few varieties have been developed and they have shown potential for these areas can be implemented.

d) Similarly, groundnut is the major crops in Rayalaseema area and TMV 2 was the major variety farmers' uses. However, now, 60% of the area is replaced with Kadiri and ICGV 9114 varieties as they perform superior over TMV2. However, there is a scope to improve area coverage under new high yielding verities with extension and research demonstrations.

e) Farming system approach is critical to unlock the potential of agriculture and allied sectors in the state and it needs convergence of organizations, schemes and programmes. In this connection Universities have good strength to facilitate research and development initiatives by partnering with national, international and private companies along with line departments.

f) He also touched upon micro irrigation system. Mobile drip irrigation is being proposed by Dr. Padmaraju in collaboration with Jain Irrigation Systems Ltd. Good practices such as aerobic rice with drip irrigation with system approach in Tamil Nadu can be adopted. There is need to standardise the practices for fish, cattle.

g) Castor, maize, Bengal gram are introduced newly and got success in increasing the yield which can be up scaled to larger areas for profitability.

National Bank for Agriculture and Rural Development (NABARD):

Mr Subash Chandra, DGM, revealed that the objective of the bank is to accelerate capital formation in agriculture with the following initiatives: 1) Long terms investment, other than crop loan; 2) Set up accounts linking with Jan Dhan Yojana; 3) Kisan Credit Card (KCC) for farmers and weavers; 4) Pledge loan for farmers; 5) Producers organization; 6) Joint liability group financing; 7) Formulating area development schemes (nearly 5 Dairy Development); traditional fish farming in Krishna District; poly house cultivation; 8) Watershed projects in Andhra Pradesh – linking with all interventions; 9) SRI promotion under UBNR (Umbrella Building for Natural Resources) and 10) Infrastructure development – linking with credit

Dr YSR Horticulture University:

Dr Jampala Dilip Babu, Director of Research highlighted some of the issues and contribution towards the mission such as 1) The availability of planting martial and right quality is the problem; university will have the vital role in providing good quality planting materials to the farmers; 2) Skill development for farmers and students; 3) Actual and potential yield gaps of crops are found huge therefore, role of University will be bridging the yield gaps; and 4) University also has the mandate to help Line departments in identifying the suitable crops by cropping zone.

Mee-Rythubazars.com:

Mr. N Praveen, Director, Narayani GhramIT Systems P Ltd (NGIT) said that Rythubazars are to connect farmers with the market and mobile bazars using ICT tools (only for primary market not for secondary market). He mentioned some of the issues where they can contribute their works such as 1) Primary marketing channel, which is the crucial for farmers to get additional income; 2) One stop repository for farmers, farmers to farmer market link and also traders can come together; and 3) Village level entrepreneurs - micro level on line entrepreneurs.

Bharatiya Agro Industries Foundation (BAIF):

Mr B Shivarudrappa, Program Director, highlighted that 1) livestock development must be linked with wasteland development with fodder production; 2) They have established agribusiness centres in Guntur and trying to establish custom hiring centres for promoting mechanization; 3) Already BAIF is implementing IWMP projects with the help of GoAP and ICRISAT; and 4) Sexed semen technology to implement to produce high yielding varieties of animals.

1200–0130 pm: Discussions

1. Mahindra and Mahindra can be focused on 16-20 hp tractors as they are in demand and can be attached with implements which will be useful to carryout agricultural operations easily.
2. Data base on prices of commodities especially market prices for horticulture crops are required to farmers to make decisions.
3. Secretary, market department said that e-markets are developed and can be discussed separately.
4. For horticulture, machinery (pruning of mango for eg.) for perennial trees and harvesting the crops using machineries is needed.
5. Mr SP Tucker plotting everything as to where these companies will start their interventions is needed. Every university will identify students to undertake research funded by the Government.
6. For fisheries World Bank has to come and help us with whatever the money (eg. 5,00,000 crores) they sponsor. Every year we have to add extra contribution to the GSDP.
7. Good officers are being posted and will not be transferred during next 5 years.
8. 2 lakh ha worth of water bodies are being developed with huge potential on fisheries. 1 lakh families will be supported with special package.

9. Urgent priorities for 2015-16 can be listed before budget and included in the work plan.
10. We need to identify field functionaries.
11. Food processing: 2% is being processed and 25-30% is wasted. Most of the product is not useful for processing. Therefore, varieties suitable for processing should be promoted and educate farmers accordingly.
12. Need coordination between different departments to rejuvenate depleting water bodies in Anantapur and Chittoor districts.
13. Bankers play a major role in extending credit support to farmers, producers and processors.
14. Ms Usha Rani, Commissioner, Horticulture department was asked to prepare a plan for 4 districts of Rayalaseema region as the future of Rayalaseema is 25-30% population will migrate to urban areas.
15. Marketing of existing millets is necessary. We need master plan to include the entire requirement.
16. 1 lakh poly houses are needed in Rayalaseema.
17. Due to lack of budgetary provision less adoption in micro irrigation
18. Move away from subsidy; Plan of action with detailed activities, money required and other logistics needed.

0130–0200 pm: Lunch Break

0200–0300 pm: Technical Session II

Facilitators: Drs SP Wani & KV Raju

Working Groups on each sector – Concerned secretary to chair subsector working group sessions and set the scenes
Group 1: Agriculture Sector
Group 2: Horticulture/Sericulture Sector
Group 3: Livestock Sector & Fisheries Sector
Group 4: Marketing Sector
Group 5: Water Resources/Irrigation Sector

0330–0530 pm: Plenary Session

Chair : Sri Chandrababu Naidu, Hon'ble Chief Minister
Rapportuer : Girish Chander

0330–0335 pm: Opening brief:

Mr SP Tucker, Special Chief Secretary started an informal discussion till Hon'ble CM Mr Chandra Babu Naidu arrived. The discussion started on identifying pilot sites to start with.

a) About the identification of 10,000 ha pilot sites, he told that preferably these may be contiguous areas in a district, but need to cover major farming & related systems in the district.

b) As pointed out by the delegates, Kurnool and Anantapur districts were decided to be developed as seed capitals. Commissioner, department of agriculture also pointed out that, department seed farm is also there in Tangaditangai about 25 km from Kurnool. West Godavari and Krishna districts were identified suitable districts for maize seed production; Rajamundry was identified as suitable site for poultry related enterprises;

c) Krishpatnam for leather industry, Kakinada region for mangrove crabs. Participated private partners proposed establishing e-marketing platform, polyhouses, and low energy drip system.

d) Mr SP Tucker suggested AP Primary Sector Mission is a good opportunity to support 100 students for their masters and doctorates projects with a focus to tap CGIAR knowledge into the state.

e) On endowment support from industry, Mahindra & Mahindra delegates told to take up issue with headquarters in Mumbai and assured to support in watershed projects and establishing custom hiring centres (CHC).

f) BASIX delegate shared her experience of working on farmer institutions and proposed to build one farmer producers companies per block in next 5 year.

g) Mr SP Tucker highlighted on sensitizing farmers about such changes and told BASIX delegate to come up with a model.

h) Regarding opening animal husbandry college, lack of qualified staff was highlighted. Keeping in mind the high growth of sector in AP, some delegates highlighted the issue of relocating APEDA to AP.

i) Dr SP Wani, consortium leader urged the groups to come up with action plans in a week's time and gave some suggestions such as 1) He told to prepare work plans along with budget put in log frames; 2) Focus on strengthening of extension, particularly by private partners; 3) He emphasized on supporting farmers beyond 2-3 years along with policies; 4) He told that proceedings of the meeting will be circulated in 4-5 days to be a way forward document; and 5) He also told that all participating organization need to bring in convergence of activities in pilot sites in each district.

Mr SP Tucker: opening remarks

Plenary session started with the arrival of Hon'ble CM Mr Chandra Babu Naidu. Mr SP Tucker, Special chief secretary presented an opening brief about the discussions done and outputs of the day to the CM, Mr Chandra Babu Naidu.

a) He briefed that we are targeting double digit growth in primary sector and creating a think tank for the same.

b) This will follow working in small groups for minute details. This initiative is supposed to create 3 million jobs in fisheries and 1 million in agriculture sector.

c) He briefed that private players like Jain & NETAFIM have done good work on polyhouses; Sumitomo in mechanization; Mahindra in establishing custom hiring centres (CHC); and that will be now replicated in AP.

d) Respective Commissioners and Secretaries will chalk out the implementation strategies. ICRISAT will develop a logical framework

The delegates highlighted the issues to the CM, Mr Chandra Babu Naidu;

1. **APEDA** delegate briefed CM about 1) Introduction of new fish species and shrimps; 2) Pathogen free brood stock; 3) Employment potential of 3 million; 4) Issue for credit of leading banks in AP; and 5) About aquaculture show is being organised in Vijayawada on 20 Feb, 2005 in which about 6,000 farmers from India including 4,000 from AP are participating.

   The CM told that aquaculture is foremost important target area for AP and suggested that 1) Keep best experts required from local, national, international in the task force; 2) Focus on disease control in aquaculture; 3) Indicate resources required in the plan; 4) Address the problems in industry and give an action plan within 2 weeks' time and 5) He emphasized that in each commodity, we need to bring in world leaders & best practices throughout the whole value chain and each commodity to have a task force.

   a) Participating delegates highlighted the issue that institutions dealing in aquaculture may be proposed to be placed in AP – eg APEDA.

   b) Mr SP Tucker briefed the CM that throughout the discussions, we have identified about 15 products, with value ranging between Rs 2,000 – 17,000 crore and asked concern groups to design strategies with the value chain.

2. **ITC** delegate briefed CM following issues 1) Their work on chillies and turmeric in West Godavari, Kurnool; 2) Highlighted the issue of aflatoxin in chillies which has a negative impact on export potential; 3) He put forward a proposal for promoting good practices in 5,000 ha area.

3. **BAIF** highlighted the issue of sexed semen for producing female cattle. He told up to 60% success rate in conception.

4. **Nuziveedu Seeds** company delegate highlighted 1) the natural environment in AP for seed industry; 2) Chillies in the state are number 1 in volume, but there is lots of scope for quality improvement; 3) About 70% of paddy areas have poor varieties, and replacement needs to be a priority; 4) In cotton, high density planting is an opportunity with minimal cost increase of up to Rs 2,000/-; 5) He also proposed changing cropping pattern in Anantapur from groundnut to millet as the district is very drought prone; and 6) For drought proofing, he highlighted soil & water conservation.

   The CM Mr Chandra Babu Naidu told that 1) We want to go in a big way for micro irrigation, and bankers are also told so to finance with various models of

financing; 2) He particularly showed interest in mobile sprinklers as a life-saving irrigation and suggested to come out with details; and 3) He also emphasized to work out charging of bore wells.

5. **ANGRAU** vice-chancellor told that university along with RDT found mobile sprinklers very beneficial.

6. **Mr Tucker** briefed that average expenditure on mobile sprinkler wetting is about Rs 1500/- per acre.

7. **Jain** delegate briefed that 1) The small drip irrigation kits costing Rs 10,000/- are available for small farmers; 2) He highlighted the issue of no subsidy plan for high density planting; and 3) He also proposed planning a processing plant by the company in the state.

8. **Nagarjuna seeds** delegate told that 1) They are leader in water soluble fertilizers; 2) Their strength is in customized nutrients (eg for rice, chillies), seeds and micro-irrigation; 3) Factory in Kakinada has a production capacity of 1,50,000 tones crop specific fertilizers; He told C:B ratio of customized fertilizers between 6% to 20%; and 4) They have done pilot proof of concept in 1,000 ha.

   The CM asked to come out with how much area Nagarjuna can pilot with use of customized fertilizers.

a) As regards, discussion on establishing colleges, he told that all to be started at the earliest in the next year.

9. **Ms Usha Rani** briefed that 1) Around 40000 ha drip irrigation is targeted this year; 2) Maximum cost of drip which depends on crops, is ~Rs1.2 lakh; and 3) In new AP, about 5.6 lakh ha area is covered with micro-irrigation.

   The CM indicated to target to cover 2 lakh ha this year.

10. **NETAFIM** delegate highlighted that their potential role in the mission in activities on irrigation system and skill development.

11. **Mahindra** delegate briefed that 1) They have done good work in establishing custom hiring centres in a big way and they will come up in next few weeks with proposal and districts to be covered under this activity; 2) She also proposed establishing rice solution centres with availability of nurseries and rice transplanters and 3) She told that ~ 1 lakh transplanters are ready to be made available in AP.

12. **The Director General, ICRISAT** shared a presentation on the use of digital technology in agriculture for improving productivity and livelihoods; and capacity building of stakeholders.

The six group leaders on agriculture, horticulture/sericulture, livestock, fisheries, marketing and water resources/irrigation shared their discussion which was held in preceding Technical Session-II and key points are.

Group 1: Agriculture Sector

Commissioner of Agriculture, Mr MadhusudanRao briefed that there are following gaps in agriculture; 1) Crop based mechanization and availability & affordability of equipment; 2) issues such as yield gaps, along with productivity and crop quality; 3) Attracting youth and skill development; 4) Soil health degradation; 5) Water use efficiency; 6) Indiscriminate use of fertilizers; 7) Climate & weather advisories; 8) Extension services; 9) Small size farm holdings; 9) Value addition; and 10) Low cropping intensity.

He briefed that process based delivery of technologies is important for the success.

a) As regards interventions, he indicated that soil health mapping and soil-test-based management of fertilizers need to be the starting point. Already department of agriculture has analysed 45000 samples. Private companies like ITC, Coromandel and other also have soil analysis data; all needs to be pooled and looked for gaps. The gaps are to be filled by appropriate sampling led by ICRISAT. For soil sampling, the village will be divided in 3 parts for sampling in year 1, 2 and 3 as per the strategy of government of India. The inputs including secondary and micronutrients will be placed by month of May 2015

b) As regards to seeds, varietal change is required in many regions e.g. 80% rice in West Godavari is not super fine and similarly in other districts. ANGRAU urged to take lead in the seed sector.

c) For mechanization custom hiring centres are to be focused. For mechanization related issues. Mahindra is proposing rice transplanters (500 no's). Sumitomo is already working in field on mechanization issues. Nuziveedu Seeds also has solutions w.r.t. planters & pickers. Mr Venkateshwararao is leading from Commissioner Office in mechanization issues.

d) All planned interventions are to be superimposed in 10,000 ha pilot site. Whole state has to be covered with science-led interventions in 4 years. To achieve targets, large scale radical changes are targeted including realignment of policies. For extension activities, Mr Narayan Choudary from Commissioner Office will lead. As regards, Economics & Investment, Dr KV Raju from ICRISAT will coordinate.

   The CM pointed out to highlight measurable indicators, costs and benefits of all interventions to establish credibility. He focused to train entire department and take private company resources for capacity building for entire value chain.

Group 2: Horticulture/Sericulture Sectors

Participants:
1) Ms Usha Rani, Commissioner (Horticulture.); 2) Dr BMC Reddy, Vice-Chancellor, YSR Univ. of Horticulture; 3) Dr. Dilip Babu, Director of research, Univ. of Horticulture; 4) Mr. Anil Katari, Jain irrigation; 5) Mr Krishna Kumar, ITC; 6) Dr Gajanan Sawargaonkar, Scientist, ICRISAT; 7) Dr Amey Tilak, Hydrologist, ICRISAT; 8) Dr C S Pawar, Entomologist, ICRISAT; 9) Ratna Charyulu- ADH; and 10) CS Venkateswara- ADH

a) Ms Usha Rani gave a brief overview about Horticulture and sericulture sector in the state. From the private sectors, ITC and Jain irrigation voluntarily came forward and shared their ideas for developing the sector for a win-win proposition.

   i) Horticulture occupies 16.26 lakh ha area with 255 lakh t production in the state. Fruits productivity is 17.3 t/ha and vegetable productivity is 18.2 t/ha.

   ii) The year 2015-16 budget for the sector is 421 crores.

   iii) She highlighted that the priority is on promotion of organic vegetables and fruits. Particularly the focus is on onion and tomato.

   iv) Vegetable clusters are planned to be developed in and around district headquarters.

   v) There is good scope of developing cocoa (Cadbury plant).

   vi) The plan is on establishing pesticide residue analysis labs for ensuring quality and custom hiring centres for mechanization.

   vii) She informed that there are 38 lakh horticulture farmers in state and the subsidies are targeted on crates, sprayers etc. Sericulture is another potential sector need to give priority in AP state.

b) **ITC representative:** Mr Krishna Kumar mentioned that

   i) They have submitted a proposal to GoAP to establish market linkages for chilli cultivation taking in to account seed to seed concept and ensuring assured buyback from the identified farmers with a premium rate.

   ii) He proposed to adopt one village/ district covering 5,000 farmers from Prakasham, Kurnool and West Godavari Districts in this initiative.

   iii) He mentioned that they will depute extension agents for capacity building of farmers on good agricultural practices with reduced pesticide usage for better green chillies.

   iv) As per his understanding, this initiative may results in at least 10 % yield improvement resulting into 18 cores additional benefit across these 5,000 identified farmers.

   v) For this initiative, ITC required the infrastructure support from AP government for post-harvest processing.

   vi) Similarly, for integrated crop management, government should distribute IPM kits for reducing pesticide level in the final product.

   vii) He has proposed to have the 11.9 crores share from government side whereas similar share on 50-50 % basis will be invested from ITC and beneficiary farmers.

c) From Jain irrigation: Mr Anil Katari mentioned that

i) Proposed to establish custom hiring centre for modern machineries in Chittor with the support from government and Jain Irrigation ltd.

ii) He suggested involving local youth in this initiative which will inculcate the qualities of entrepreneurship amongst the villagers.

iii) He requested government to support for supplying good planting materials for vegetables (viz. tomato) and fruit crops (Viz, Mango, guava, Amla, Sapota) on timely and needy basis.

iv) He also agreed to work on Annuity mode to establish 30,000 acre drip systems on farmers' field.

d) **YSR Horticulture University:** Dr BMC Reddy, Vice chancellor,

i) He suggested promoting the available high yielding varieties of vegetable and fruit crops.

ii) He highlighted the need to promote low cast poly houses, shed nets to bridge the existing wide yield gaps.

iii) He also agreed to do the capacity building of farmers on different best production practices, protected cultivation and irrigation management to horticultural crops.

e) Sericulture: Ms Usha Rani highlighted that

i) The decline in area and production of mulberry and silkworm calls for roping in landless labour/ Women SHGs for rearing silkworms.

ii) Similarly she suggested promoting improved varieties of Mulberry as well as silkworm species.

iii) She also highlighted the need to establish forward linkages viz. reeling/twisting/ weaving activities and stressed on Chawki rearing and improving the existing grainages.

The CM told to identify 5-7 priorities, and go extensively on those.

Group 3: Fisheries/Livestock Sectors

Participants:
1) Dr Manmohan Singh, Principal Secretary, Animal Husbandry 2) Dr KR Trivedi, National Dairy Development Board; 3) Dr VA Srinivasan, National Dairy Development Board; 4) Mr B Shivarudrappa, Program Director, BAIF); 5) Mr Elias Sait, Sectary General, Marine Exporters Association; 6) Mr Jiji Mammen, Chief General Manager, NABARD 7) Dr Kaushal K Garg, Scientist, ICRISAT; and 8) Dr KH Anantha, Scientist, ICRISAT

Livestock

The group deliberated following areas where public private partnership is possible.

a) Financial Support of Rs.18 Cr under Progeny Testing Program in Chittoor district and Rs.6.5 Cr to modernize Banavasi Semen Station will produce 20 High Genetic Bulls, leading to increase in milk production of 6 crore liters / year during next 2 years (starting from next year) – adding Rs.250 Cr / year to GSDP.

b) For strengthening village cooperative milk cooperatives in Krishna, Guntur, Nellore and Kurnool Districts with an outlay of Rs.8 Cr – Ration Balancing Program will be taken up covering 60,000 farmers (@Rs.25/- additional benefit to farmer) – benefitting to a tune of Rs.60 Cr to the farmers.

c) Village-based Milk Procurement System will be strengthened by providing milk collection equipment, capacity building etc., with an outlay of Rs.14 Cr

d) State government will approach NDDB for further expansion

e) Under NDP Phase II, it is proposed to support Milk Processing Plants – NDDB to be approached for finalization of modalities

f) Introduction of 25,000 doses of Sexed Semen results in additional increase of 4 Lakh Liters of milk per day (from 4th Yr onwards) – Rs.180 Cr to GSDP per year

g) Fodder demonstration and processing unit for high quality fodder varieties (100 Acres) at BBC, Nekarikal in Guntur Dist – yielding 100 MTs of fodder seed to be cultivated in 5,000 acres additionally producing 3.5 Cr extra milk worth of Rs.100 Cr

Fisheries

a) Production was 3,67,000 ton last year.

b) Growth of fisheries is good now but need to sustain it. Viability for the farmers is less than earlier.

c) Marketing: brood stock supply has to be increased through multiplication centres. This can be done with the help of private sectors.

d) Approximately 5 multiplication centres with large investment has to be set up in the state for improving the supply of brood stock.

e) The cost of Brood stock is about Rs. 10 million (Hatchery); Rs. 400 -500 million for a hatchery; survival is 90-95%. Approximately 2.5 million spf will be produced.

f) By 2020 (in 5 years), the production goes up from 2.5 lakh tonnes to 5 lakh tonnes and export will go up from 12,000 crores to 25,000 crores.

g) Rs. 1,500 crore investment is required which will come through banking channels.

h) Rs. 3,200 crore investment for processing and cold storage

i) MPEDA will spend 80 crore every year; farmer will contribute Rs. 1,500 crore; Rs. 3,500 crore will be raised by processing units.

j) MoU between MPEDA, government, and private sectors for seed production and establish 3-4 hatcheries for tilapia (15 hatcheries required and 3 hatcheries will be provided by the government) are required.

k) MPEDA will provide need based advisories (technologies) to farmers.

l) Potential of Rs 5,000 Cr revenue from deep sea fish is available provided good airport is made available for exporting.

m) Andhra Pradesh farmers are exporting highest volume of value added products.

n) Quarantine – 12 crore yet to get from Ministry of Agriculture.

The CM told to prioritise fish, dairy, poultry, sheep.

Group 4: Marketing Sector

Participants:

1) Dr B Kishore (Commissioner of Marketing); 2) Dr Subhash Chandra (DGM, NABARD); 3) Sri Ranjan Sinha (E & Y); 4) Mr N Praveen (Director, Narayani Ghram IT Systems Pvt Ltd); 5) Mr AVVV Prasad (Registrar of Coop Society); 6) Mr Ravi Kumar (Joint Director of Marketing); and 7). Dr Mukund Patil (ICRISAT).

Discussion points

a) Committee opined that in marketing, farmer or producer is the crucial focal point. Thus, good marketing strategy should first ensure that his interests are fully met.

b) Marketing at the door step of the farmer should be aimed at. A core committee is already formed by the Govt. to propose the reforms in marketing. Detailed modalities have to be finalized by the core committee (Marketing department) under the guidance of Advisor to Government.

c) Initially the group felt that one Agriculture Marketing Committees (AMC) per district as pilot can be chosen for this activity under the PPP mode. The farmers/producers can associate themselves and nominate one person as e-marketing mitra at the Gram panchayat (GP) level. A mobile phone installed with app and internet facility should be provided to e-marketing *mitra.* He will ensure that the produce available in the panchayat belonging to the members will be aggregated and uploaded into the online marketing platform using mobile application. The interested purchasers will be encouraged to pay the producers in cash. In due course, e-payment mode or bank guarantee from the purchaser can be ensure, where cash payment is not immediately forthcoming.

d) For storage facility, one godown/ cold storage should be ensured at each mandal level by tapping necessary assistance from RIDF., warehouse infrastructure fund or through Agri-Tech infrastructure fund or through any other suitable finances. A project report has to be submitted by marketing fund for mobilizing required funds.

e) If required, AP (Agriculture Produce and Livestock) Market Act can be suitably amended

f) At the GP level, the producers shall be ensured necessary weighing, drying, moisture meter, etc.

g) Today one company (Narayani Ghram IT Systems Pvt Ltd) came forward to associate itself for the pilot project under PPP mode in Chittoor district.

h) The committee felt that the group should meet frequently to propose realistic reforms.

Group 6: Water Resources/Irrigation Sector

Participants:

1) Mr Joseph, AP Forest Dept; 2) Mr N Nageswara Rao, AP Forest Dept; 3) Mr CLN Rao, NETAFIM, Hyderabad; 4) Dr DN Kulkarni, Jain Irrigations; 5).Mr Rajesh Nune, ICRISAT; 6) Sthuti sharma, KPMP; and 7) Dr.KVRaju, ICRISAT

Discussion Points:

a) Adopting drip Irrigation system with sensors and water meters: To distribute the water evenly up to tail end farmer in the system.

The President, Jain Irrigation systems, Mr. Kulkarni said that this system may cost approximately Rs 1.8L per Ha, including all costs and returns of Rs.20,000 per ha (Maize) to Rs. 80,000 per ha (sugarcane) as a additional income to the farmer or farmer will be paid at Rs.20,000/ per ha If farmer lease their lands to any company, who are ready to cultivate.

b) ***Discussion of Forest Department officers:*** (Requires policy change) To conserve, protect and grow of forest lands participation of private companies:

   i) Under Vana Samarakshana Samithi, some of the identified areas by forest department can be given to the private companies for growing high value crops such eucalyptus, medicinal plants as returns to the company.

   ii) Nursery and solar power generations also can be taken place in those areas

c) New policies: To conserve water resources some of the policies may need to change or reform or newly made such as, sugar cane areas should use only drip irrigation not flood irrigation

d) Micro watersheds water auditing: Water auditing can also be conducted through private sectors (From 1ha – 25,000 ha Micro watersheds).

e) Convergence of departments: Dry land farming, collection of rainwater in farm pond for utilising as two or three lifesaving irrigation during non-rainy seasons can improve productivity by 50%. (Subsidies offered by government is very important).

f) Water sharing/ bore well sharing with many farmers: Farmers can get water from bore wells of neighbouring farmers by paying approximately 10% of total cost of cultivation for better yields.

g) For reaching poor farmer (<0.5 acres), Family drip irrigation systems can be introduced, particularly in hill regions and tribal areas (ITDA farmers), Water from a bore well can be pumped to a high elevation tanks and then release water through gravity flow to the farmers as lifesaving irrigations for better production and livelihood

h) Dr Wani suggested, it is time to think about perennial source of wastewater from villages that can be treated and used for growing livestock feed in communal lands of the village.

The CM, told to come up with plan of action in 2 weeks' time. He told to continue meetings in small groups to work out detailed work plants for 2015-16. The similar meeting can be arranged and final plans discussed.

Dr Raju, ICRISAT presented vote of thanks to the CM and ministers. He thanked chief secretary, Special chief secretary, all sector secretaries & commissioners involved in planning. He also thanked line departments, private companies, NGOs. He also thanked DG ICRISAT, Director IDC & ICRISAT staff & rapporteurs.

Highlights

AP Primary Sector Mission is one of the 7 Missions of Swarnandhra-2029 vision, to achieve the happiness index of AP farmers and to harness the potential of AP state. In this context, government of AP is looking forward to prepare detail work plans and strategy of all Primary Sectors with the help of ICRISAT and other knowledge institutes such as Acharya NG Ranga University, YSR Horticulture University etc. Please find annexure II for more details of this mission and objectives

1. Government primary sectors have to perform their respective roles and also collaborate with professional agencies like ICRISAT to achieve the mission goals. In addition to this the new capacity needed in terms of human resource to be worked out to carry forward the objectives of the mission.

2. Stakeholders such as private and research institutes need to share and contribute by formulating right technologies, knowledge and methodologies for achieving the system level out comes in this mission.

During the interaction of Honourable Chief Minister Mr Chandra Babu Naidu with all departments and private sectors, respective in-charges have discussed their proposed interventions with him as stated above; some of the highlights of the workshop are given below

3. All proposed/planned/suggested interventions are to be superimposed in 10,000 ha pilot site area initially and then whole state has to be covered in 4 years.

4. Proposed interventions must indicate clear costs, benefits and measurable indicators stage wise to establish credibility.

5. In each commodity must choose 5-7 priorities, need to bring in world leaders & best practices throughout the whole value chain and each commodity to have a task force.

6. Capacity building of concern departmental staff and farmers on respective intervention for entire value chain has to be taken place with the help of private company resources if required.

7. Establishment of custom hiring centres

8. Involve/train 100 – 200 students for their masters and doctorates projects with a focus to tap CGIAR knowledge into the state.

Some other Key points

9. Preparing major and micro nutrients application recommendations for all major crops based on soil-tests and issuing soil health cards

10. Changing seed varieties: ANGRAU will helps in replacement of rice varieties in some of the districts.

11. Kurnool and Anantapur districts were decided to be developed as capitals of seeds. West Godavari and Krishna districts were identified as suitable districts for maize seed production; Rajahmundry was identified as suitable site for poultry related enterprises; Krishnapatnam of Nellore district for leather industry and Kakinada region for mangrove crabs.

12. Government policies have to be farmer centric; subsidies should be long term rather than short term subsidies, assured market, avoiding price disparity, adopting modern technology for benefiting the small scale agriculture and increasing farmer's income.

13. Production of Integrated Pest management (IPM) chilly with better export quality (with better pricing 20% extra price) with integrated crop management practices has high importance in some regions of AP.

14. Climate smart villages, an opportunity for encouraging sustainability agriculture with tank management based agriculture and integrated watershed management – drought proofing is the outcome

15. Aquaculture is foremost important target area for AP and the CM suggested that 1) Engage best experts required from local, national, international institutes in the task force; 2) Focus on disease control in aquaculture; 3) Indicate resources required in the plan; and 4) Address the problems in industry and give an action plan within 2 weeks' time

16. Mahindra and Mahindra can focus on 16-20 hp tractors as they are in demand and can be attached with implements which will be useful to carryout agricultural operations easily.

17. Data base on prices of commodities especially market prices for horticulture crops are required to farmers to make decisions.

18. For horticulture, machinery (pruning of mango for eg.) for perennial trees and harvesting the crops using machineries is needed.

19. For fisheries World Bank has to come and help us with whatever the money (eg. 5,00,000 crores) they sponsor. Every year we have to add extra contribution to the GSDP.

20. Good officers are being posted and will not be transferred until 5 years.

21. Around 2 lakh ha worth of water bodies are being developed with huge potential on fisheries. 1 lakh families will be supported with special package.

22. Food processing: 2% is being processed and 25-30% is wasted. Most of the product is not useful for processing. Therefore, varieties suitable for processing should be promoted and educate farmers accordingly.

23. Need coordination between different departments to rejuvenate depleting water bodies in Anantapur and Chittoor districts.

24. Bankers play a major role in extending credit support to farmers, producers and processors.

25. Marketing of existing millets is necessary. We need master plan to include the entire requirement.

26. 1 lakh poly houses are needed in Rayalaseema.

27. For micro irrigation, bankers are requested to finance with various models of financing such as mobile sprinklers as a life-saving irrigation, charging of bore wells, etc. optimize the use of existing water

28. For strengthening village cooperative milk cooperatives in Krishna, Guntur, Nellore and Kurnool Districts with an outlay of Rs.8 Cr – Ration Balancing Program will be taken up covering 60,000 farmers (@Rs.25/- additional benefit to farmer) – benefitting to a tune of Rs.60 Cr to the farmers.

29. Village Based Milk Procurement System will be strengthened by providing milk collection equipment, capacity building etc., with an outlay of Rs.14 Cr

30. Marketing brood stock supply has to be increased through multiplication centres. This can be done with the help of private sectors. Approximately 5 multiplication centres with large investment has to be set up in the state for improving the supply of brood stock.

31. Adopting drip Irrigation system with sensors and water meters: To distribute the water evenly up to tail end farmer in the system.

32. Under Vana Samarakshana Samithi, some of the identified areas by forest department can be given to the private companies for growing high value crops such eucalyptus, medicinal plants as returns to the company.

33. Water sharing/ bore well sharing with many farmers: Farmers can get water from bore wells of neighbouring farmers by paying approximately 10% of total cost of cultivation for better yields.

34. For reaching poor farmer (<0.5 acres), Family drip irrigation systems can be introduced, particularly in hill regions and tribal areas (ITDA farmers), Water from a bore well can be pumped to a high elevation tanks and then release water through gravity flow to the farmers as lifesaving irrigations for better production and livelihood

35. Utilisation of perennial source of wastewater from villages that can be treated and used for growing livestock feed in communal lands of the village.