

PROCEEDINGS OF THE STATE LEVEL WORKSHOP ON IMPROVING PRODUCTIVITY AND LIVELIHOOD IN EASTERN UTTAR PRADESH

Tata Trusts



*State Level Workshop
on
“Improving Productivity and Livelihood in
Eastern Uttar Pradesh”*

*February 27th-28th, 2015 at Dayal Paradise
Lucknow*

Project Sponsored By:
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Integrated Research and Action for Development (IRADe),
New Delhi



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27-28th February, Lucknow, UP

PROCEEDINGS' OF DAY-1, 27TH FEBRUARY, 2015, LUCKNOW, UTTAR PRADESH

The State level Workshop on Improving Productivity and Livelihood in Eastern Uttar Pradesh was organised by IRADe (Integrated Research and Action for Development (IRADe), New Delhi on 27th-28th February, 2015 at Hotel Dayal Paradise, Lucknow. The workshop was attended by about 50 delegates from the Central and State Government functionaries, donor organization, ICAR, Private Entrepreneurs, SDTT NGO partners, and IRADe project team.

The objective of the workshop was to present the vision and district plans and to design an integrated and participatory action plan for the development of the area in general with specific reference to agriculture, non-agriculture and allied areas for improving the livelihoods of the



Dignitaries on the Dias during the inaugural session

stakeholders. It aims to highlight the agriculture potentials which can be developed through on farm, off farm and non-farm activities and other priority areas and also to improve infrastructure and linkage support from State Government and other developmental agencies. For preparing the district level plans, consultation with various district level and block level officials as well as with technical institutions were carried out to understand their area specific interventions in the district for improving agriculture and non-agriculture activities. Many sectors were visited in the districts to understand the grass root level implications of these interventions for improving livelihoods and sustainable development and how they can be synergized with SDTT activities for improving the livelihood of the stakeholders.

Apart from Government agencies, NGOs and Corporations have also shown a growing interest for improving agriculture productivity and rural livelihood through various kinds of interventions. A district level approach in this direction will provide more micro and region specific activities which can be carried out to promote agriculture productivity and rural livelihood. Realizing the need to analyse the effectiveness and the identification of the best practices as well as the gaps in the extension systems, a project titled, **“Analysis of Factors Affecting Agricultural Productivity in the Flood Plains of Eastern Uttar Pradesh to Synergize SDTT investments in the Region”** supported by **the Tata Trusts, Mumbai** was carried out by Integrated Research and Action for Development (IRADe), New Delhi.

The workshop intends to facilitate the sharing of experiences and strategies among the various stakeholders.

OBJECTIVES

The objectives of the workshop are summarized below:

- To share the outcomes of the study arrived through primary survey, case studies, PRA's and consultation with stakeholders.
- To suggest linkages between State Government, State Agriculture University, Indian Council of Agriculture Research, Agrilclinic and agri-business centre (ACAB) and NGOs for improving agriculture productivity and promoting rural entrepreneurship.
- To suggest linkages with best partner approach at implementation level with other partners of the district.
- To develop strategies of partnership within NGOs and also with State Departments/ Ministries at various levels.

INAUGURAL SESSION

WELCOME AND INTRODUCTORY REMARKS

DR. KIRIT PARIKH, CHAIRMAN IRADE, NEW DELHI

The program started with the welcome and introductory remarks by **Dr. Kirit Parikh, Chairman, IRADe, New Delhi**. In his remarks he shared the information on the status and background of the study and state level workshop objectives, he also spoke about the policies of the Government to support or improve the livelihood of Eastern Uttar Pradesh region.

Dr.Parikh highlighted the work done by IRADe in which an earlier study looked at Indian agriculture with a longer term prospective up to 2040 and it highlighted the role agriculture would play in the development of the country's economy. He stressed that agriculture sector needs to have

a growth rate exceeding 4% if the country wants to have an economic growth of 8% or more. So it becomes extremely critical to have an agriculture sector which is vibrant which keeps growing at a good pace and it's not just a question of increasing the prices to show the increase in agricultural output because that would really make many of the poor who do not adequate income to really suffer from high food prices.

Dr.Parikh stressed that we need to think in terms of having an agricultural growth which is robust and it increases livelihood opportunities of the sector as well as increases its productivity. So productivity becomes very critical, but for increasing the agricultural output with that kind of a pace would mean that areas where we have not yet fully utilized the potential of these agriculture productions have to get highest priorities. Thus areas in Eastern Uttar Pradesh, Bihar becomes the areas where we will need to do something about agricultural development, increase the pace of growth of agricultural output and that was the reasons why IRADe was very clear to see that we can do something here. SDTT had already taken up this challenge and has been working for



number of years in these Eastern Uttar Pradesh districts. So IRADe had an opportunity to work with them and we thought we could provide inputs and contribution to it by having an independent look at what is happening and what can be done? So the whole purpose of our idea was to first assess the potential of what can be produced in these districts and look at what has to be done in terms of increasing agricultural productivity, try to understand what are barriers? What are the reasons? Why this production potential has been not been realized? And to achieve this our approach was to do primary survey, do PRA's, to really get the people's perception, talk to other stake holders, agricultural scientist, workers who work at ground level, extension workers, and so on to get a kind of comprehensive understanding of what has really happened or not happened in these districts.

He highlighted that IRADe had concentrated on three districts primarily and prepared the district level plans. What's has happened and what is the background, what can be done, what are the options that are available, and how can we increase livelihood, diversification and productivity in this area that was the real thing. Agricultural development has to go beyond on longer term prospective and we have to think about environmental concerns, issues of climate change as well.

He spoke that while there are socio-political, economic and manpower constraints within state departments, the departments and the officials have done a commendable work within their framework. And to address these issues this workshop would be the right forum. He greeted **Shri V.N.Garg, APC, Govt of UP** who took time from his busy schedule to be Chief Guest and also the other participants. He wished the workshop a grand success.

Dr.Parikh then handed over the Chair to Dr.Ramesh Chand to make his presentation, who is Director of National Institute of Agriculture Economics and Policy Research of ICAR, New Delhi.

KEYNOTE ADDRESS

DR. RAMESH CHAND, DIRECTOR, NCAP, NEW DELHI

Dr. Chand in his key note address congratulated Dr. Parikh and IRADe for choosing this theme for this workshop. He spoke that for a researcher like himself, Eastern Uttar Pradesh is the strongest candidate for both improving productivity and also for addressing livelihood of rural people. He spoke that India is a vast country with varied agriculture aspects e.g. where states like Punjab have high productivities for paddy while states where it is consumed have lower productivities like Andhra Pradesh. If we look at urgency Eastern Uttar Pradesh qualifies much more than any other region to address its productivity and livelihood issues. Quoting one of his earlier studies on districts level productivity done every five-six years. The last time districts wise study for all districts of the country was based on the data of the year 2004-05 and 2005-06. It was found that in districts of Eastern Uttar Pradesh in some district every second person was poverty stricken. In some districts 40 per cent population was below poverty and productivity in some of the districts despite the good amount of rainfall, water not being a constraint were the most arid districts of the country.



Looking at food security aspects, which is given to priority, by State, Center Government and up to United Nation, Millennium Development Goal. We find that the parameters in terms of four key aspects of food security and nutrition, be it availability of food, purchasing power of people to buy food, food safety net, utilisation of options for stability in the consumption. We find that the incidence of under nutrition's in some eastern UP districts was in excess of 80%. These are the kinds of the situation we have to address. Lack of adequate nutritious food, leads to inadequate strength, mental retardation, low human productivity and this leads to a vicious cycle.

Another matter of concern is low agricultural productivity and low growth in this part of the country in the light of what has been achieved in the Indian agriculture in last 10 years. Another study undertaken by his institute found that, there were some very healthy achievements in agriculture sectors. One was that growth rate of agricultural sector after 2005 in the country and most of the state was historical in the sense that never in a decade earlier India had that kind of growth. The country as a whole approached 4%. This growth was more inclusive as states which had low productivity showed much higher growth compared to the state which had high productivity like Chhattisgarh, Jharkhand, Madhya Pradesh, Gujarat, Rajasthan, these were the states where the growth rate was more than the 5% and growth rate in states like Punjab, Himachal Pradesh, Kerala which had high productivity had growth rates of just 2%, in Kerala growth rate was negative.

Low productivity issues are discussed with State Government regularly and concerned take this issue seriously and some of the answer to these questions are available in the reports which have

been prepared by IRADe and they highlight the ground realities in detail. The reports have looked at all dimensions of Agriculture and livelihood options for the area.

He spoke about his method of addressing problems in agriculture was very simple and effective for the region. Agriculture comprises in eastern UP of three things; cropping pattern, dominated by low value crops, productivity of individual crops is very low and third problem is despite high rainfall, the cropping intensity is not more than 140 per cent, shows that the second crop is not taken on more than 40 % that cultivable area.

In order to break out of this regime of low productivity important points to be focussed upon are that there should some breakthrough kind of technology, which can change the scenario completely. Another aspect can be introduction of new crops for e.g. soybean crop in Malwa region, Paddy in Punjab. Being from Punjab state he shared that In 1972 there was no rice crop but now in monsoon season from July to Oct on 80% area is now dominated with this crop. These and many more examples are there in the country which have totally changed and improved the local farmers life. Another aspect is introduction of new technology like the wheat revolution in the country, it was complete replacement of tall variety with the draft variety and wheat came to grown in areas where it was never grown. Another important factor is some new institutional intervention which can make a big difference and for that the best example is Gujarat, which never had any advantage in development of Dairy as they lacked water, fodder, but concept of cooperative was introduced by Dr.V Kurien Sir linked to milk processing brought and made that state as the seat of white revolution in the country. These are the three possibilities through which we can make a measurable change to scene of agriculture.

Other important points that need to be looked at are supplying quality seeds to the farmers, providing subsidy for fertilizers and seeds and providing timely credit and loans to the farmers.

In order to increase productivity the farmers should be incentivised with the fact that they would be getting the minimum support price of their produce and that in a manner that is free from hassles and politics.

Livelihood is another big issue as agriculture alone cannot insure livelihood because scale is so low, size of holding is even lower, even if productivity doubles you will find that it will not meet livelihood of many farmers, who have very low size of holding. So these are some of the issues which need to be planned. In the end he congratulated IRADe for preparing the plans for development of the districts and hoped that the State government and other stake holders would take it sincerely and show that Eastern Uttar Pradesh which has so much potential will also catch-up with rest of the country.

INAUGURAL ADDRESS

SHRI V. N. GARG, IAS, AGRICULTURE PRODUCTION COMMISSIONER, GOVERNMENT OF UTTAR PRADESH

The chief guest of the program, **Shri V. N. Garg, Agriculture Production Commissioner, Government of Uttar Pradesh**, in his address highlighted the steps taken by the Uttar Pradesh Government to promote and enhance the agricultural productivity and livelihood in Eastern Uttar Pradesh, and the commitment of the State Government to work for the benefit of the small and the marginal farmers.



In his address Mr.Garg welcomed all on behalf of the Uttar Pradesh Government for this workshop on Improving agriculture Productivity and livelihood in Eastern Uttar Pradesh. He congratulated SDTT, Mumbai for getting the Vision for development of 28 districts of Eastern Uttar Pradesh prepared through IRADe and congratulated IRADe for having prepared such a vision document and also the district reports of the three districts in Eastern Uttar Pradesh. He also welcomed all the partners NGOs, who are working with TATA Trusts in Eight Districts of Uttar Pradesh. He mentioned that Uttar Pradesh Government is already in a dialogue with the TATA Trust for entering into a MOU for the development of project districts of TATA Trusts with probability in due course of time have entire Eastern Uttar Pradesh as a part of our understanding. He said that this kind of arrangement will land support of the state government to whatever good work is done by TATA Trust. This will also help Uttar Pradesh Government in formulation of policy related to enhancing the agricultural productivity and livelihood in Eastern part of the state. He said he had the privilege of getting the copy of vision document from IRADe team who came and discuss the plan personally with the department. Mr.Garg placed on record his appreciation of the quality of districts plans as well as the vision documents which have been prepared. He hoped it will give a kind of way forward for agriculture and livelihood enhancement of productivity and other subjects in Eastern Uttar Pradesh for at least next 15-20 years. He emphasized that this will also pave way for a mutual kind of working together and help the state as a whole particularly for farmers of Eastern Uttar Pradesh.

He was very candid and said he had no doubt or hesitation in admitting that government machinery has a very difficult task of entering in the interior and remote villages of the state. He highlighted the many constraints, like inadequate staff, lots of vacancies but there are other kinds of problems, local political and so on. He mentioned that this type of involvement of non-government sector helps in grass root penetration of the development efforts. He shared his experience in Uttar Pradesh with JICA (Japan International Cooperation Agency) project in forestry namely the Uttar Pradesh Participatory Forest Management and Poverty Alleviation Project, running in 20 districts of Uttar Pradesh having comparatively larger area of forest. He spoke that here the partner NGOs who work in close collaboration with JFMC and EBCS and SHG's and found that the results of the JICA-Assisted Forestry Projects are comparatively better than the other

projects which the forest department is handling without NGO's and one reasons in involvements of comparatively better type of NGOs.

He noted that there is a mention of **Best Partner Approach** at the implementation level in the vision documents and said we need to understanding this in a much clearer way. **This best partner approach needs to be understood particularly by people in the government.** The second is this NGO to NGO linkages first and their impact. Mr.Garg quoted the vision document regarding "To meet out many of the recommendation requires active policy changes and implementation by the state government and its departments". He mentioned that to be able to implement the vision documents certain policy changes are required, what policy changes are the real critical issues because policy changes defiantly impact the whole process but **what those policy changes are** and how to convince the **senior decision makers** 'in the government including the **political functionaries** is very important. He said we have to actually delineate as to what kind of **policy changes we need.** Mr.Garg showed his interest in areas of **renewable energy and power.** He spoke that Uttar Pradesh government is doing a quite a lot on solar power, wind power is not much at present, UP is also setting up own solar power plants. On the organic farming front he spoke that UP has been trying to do organic farming because we know very well that's its effects are beneficial not only in agriculture productivity but also in terms of reducing the impact on climate change. But the way so far in **organic farming is not adequate, and is not satisfactory.**

Market linkages are another important aspect that needs to be addressed. New technologies, farm mechanisation, improved credit, post-harvest management in Eastern Uttar Pradesh are a cause of concern. He appreciated the vision document in highlighting these issues and suggesting a way forward. Mr.Garg then spoke that the UP Government was in the process of making a vision documents of Uttar Pradesh - **Agriculture 2025.** He said that IRADe's vision document can become a kind of precursor to that vision documents. He also mentioned that livelihood is another key concern and that the state Government is also planning livelihood plans for each district. He deliberated that the reasons for backwardness for Eastern Uttar Pradesh are lower productivity and agriculture production and livelihood are lower, literacy rate is lower, also not very high on various developments parameters and we need to work on that front also.

He felt very happy when we hear and talk about **Cooperation, Coordination, Conversion, Collaboration and Partnerships.** He spoke that in his 34 years of services in the administration, he has been regularly been hearing and talking these words but these are very difficult jobs. To make people sit together and converge on the subject is one of the most difficult things he has experienced in government and collaboration becomes still more difficult and partnerships are dreams if they come true.

Mr.Garg in his final words admired **Dr.Kirit Parikh** and **Dr.Jyoti Parikh** and all the colleagues for taking courage to come to Lucknow to organise this workshop, shows their dynamism, their positivity, it shows their faith that things can be improved with efforts and again thanked Sir and Ma'am for taking this initiative. He assured that on behalf of Uttar Pradesh Government whatever help, support and encouragement is needed will be provided and he reiterated that the **agreement and Memorandum of Understanding (MoU)** with **TATA Trusts, Mumbai** is very much on the cards and it is with the consent and the approval of the **The Chief Minister of the Uttar Pradesh,** so there would be no problem in taking all things forward.

CONCLUDING REMARKS

MR. ABHAY GANDHE, SENIOR PROGRAM OFFICER & HEAD-LEARNING AND DEVELOPMENT, TATA TRUST, MUMBAI

Mr. Gandhe started his address by welcoming all the dignitaries on dais, Guest from U.P. Government departments and NGO partners. He expressed his satisfaction that all partners, departments could converge here for this workshop. He mentioned that for the TATA Trust things are happening at a very significant movement where TATA trust have existed and worked in the Eastern UP and BundelKhand for 3-5 years now and are transiting in the next phase of next three years on ambitious plan of transforming agricultural productivity and scaling up of activities in Eastern Uttar Pradesh with a definite path of growth. The reason for definite path of growth is due to a specific proposal which has been recently sanctioned by TATA Trust. The Project would be called as **Sujalam Sufalam** for the benefit of our partners. Mr Gandhe further in his address detailed upon the **Sujalam Sufalam**.



A key component of the project aims at delivering the projects at large scale as compared to the present scale and the project would be market linked and the partners would have to show incremental increase in income levels of the stakeholders in the next three years down the line through the projects in their clusters.

VOTE OF THANKS

DR.JYOTI PARIKH, EXECUTIVE DIRECTOR, IRADE, NEW DELHI

Dr.Jyoti Parikh began her address by thanking Mr.V.N.Garg, Dr.Kirit Parikh, Mr.Abhay Gande and Dr.Ramesh Chand. Dr.Jyoti Parikh in her address hoped that the work shop and the documents would be of help and use to all the stakeholders associated with this sector. She briefed that IRADe is a multi-disciplinary research organisation and looks at multi stake holder issues. She spoke that agriculture is also a multi sectoral field and there are farmer issues, there are market issues, there are policy issues, and there are technology issues.

She highlighted that most of IRADe works requires amalgamation of these concerned issues. IRADe works in the fields of Energy, Environment and climate change, Agriculture, Poverty, Gender, these are the issues in which we work and the cross cutting issues as well.



She expressed her happiness that IRADe could do this work for Eastern Uttar Pradesh flood plain areas in three districts with the TATA Trusts help. She thanked Mr.Abhay Gandhe, Mr.Phansalkar and many others behind the scene dedicated people who have helped IRADe in this journey. She emphasized that throughout the journey IRADe had been discussing, its approach and activities with Mr.Gandhe and he was advising us to specially set up an office in Bacharach district and IRADe did so and employed staff in that office. IRADe field staff and senior project staff would visit the districts, villages, interact with villagers and PRA to understand the grass root dynamics of the area.

She mentioned that IRADe would be sharing these reports after incorporating the comments and suggestions received during this two day workshop and would be sharing through the public domain through IRADe's web site (www.irade.org). She specially thanked the steering committee members Shri Suresh Kumar and DrV.V.Sadamate who have always with us, always holding hands and encouraging us and ensuring we are going in right path. She thanked Dr.S.P.Singh as he had been helping with Agri-clinic and Agri-business and entrepreneurship issues. Dr.Ramesh helped us with his critical inputs and with the help of the steering committee we were able to complete the district plans and vision document and present it. Dr.Parikh emphasized that report preparation and sectoral issues require so much knowledge and IRADe is fortunate to have a multi-disciplinary team, Mr.Sharad Verma looked after Renewable Energy, Water-Sanitation issues, Dr.Shwetal Wankhade in Agriculture and agronomical issues and Dr.Ashutosh Sharma brought in his economical skills, with Dr.Kirit Parikh over seeing all the amalgamation of different inter disciplinary issues. She said that IRADe team with inputs from steering committee, workshop deliberations and inputs from Mr.Garg would be in a position to make the plans more concrete and more realistic.

TECHNICAL SESSION (TS)

The inaugural session was followed by 2 technical sessions, 1st session with presentations by IRADe on district plans and vision document and 2nd session by State Government departments dealing with various sectors like horticulture and food processing, credit and fisheries.

KUSHINAGAR DISTRICT PLAN DR.SHWETAL WANKHADE, IRADe

Dr.Shwetal Wankhade gave a detailed presentation on Kushinagar district with respect to the activities undertaken during the course of this project. The problems being faces by the local populations with respect to agriculture, climate vulnerabilities, technology interventions being adopted for improving agriculture productivity, etc. She also briefed upon the methodology adopted by IRADe in completing this district plan. Details of the PRA exercises undertaken and its relevance. Use of GIS application for elevation model, flood proneness, soil type, cropping pattern, etc.



Some important interventions highlighted for the district that could be adopted for scale up were Biomass Gasification and distributed energy for energy access, poultry farming with ABAC's, integrated fisheries development for flooded areas, value chain analysis of major crops like Paddy, wheat and sugar cane, synergy and convergence between NGO partners and technical institutes and state departments, improving water and sanitation issues in the district, low cost technical options like elevated hand pumps and flood proof toilets, importance of sugarcane information systems (SIS), weather forecasting, were also suggested for taking up in the district.

BAHRAICH AND SHRAVASTI DISTRICT PLANS

DR.ASHUTOSH SHARMA

Dr.Ashutosh Sharma gave a detailed presentation on Bahraich and Shravasti districts with respect to the activities undertaken during the course of this project. The problems being faced by the local populations with respect to agriculture, climate vulnerabilities, technology interventions being adopted for improving agriculture productivity. Dr.Sharma gave a detailed workplan of how the work was approached. Important socio-economic indicators, facility index and sectoral recommendations were highlighted for both the districts. Poultry farming through ACAB for livelihood, arsenic filters for water treatment, improving credit facilities, skill development were some of the recommendations.



VISION DOCUMENT FOR EASTERN UP

ER.SHARAD VERMA, ASSISTANT DIRECTOR, IRADe

Mr. Verma presented the vision for the project area taking into consideration the extensive field level work done by IRADe in the districts. Project backdrop and its significance was highlighted. The strengths, weaknesses, opportunities and threats in the districts and in the region sectorally were discussed in detail. IRADe's approach in preparing the vision plan combining field level data, PRA's, site visits, reviewing other published literature and plans, steering committee recommendations helped in shaping the document. Possibilities for technology expansion and adoption sectorally. Suggestions of recommendations for SDTT in the field of Agriculture, water and sanitation, energy access, gender issues, other livelihood opportunities in the area, skill development, improving infrastructure, important aspect of synergy among all the NGO partners, technology promotion and expansion and convergence of SDTT, State Government, research institutes and field level NGO's in improving the overall development of the project area was discussed.



The vision would act as a document with recommendations that SDTT could use in further planning its activities in the eastern UP districts.

HORTICULTURE AND FOOD PROCESSING

MR.M.R YADAV, JT.DIRECTOR,

DIRECTORATE OF HORT. & FOOD PROCESSING, LUCKNOW, UTTAR PRADESH

Mr.Yadav in his presentation highlighted the activities and Schemes of Horticultures Department and its linkages to improved livelihood undertaken by the department of Horticulture & Food Processing in various sectors for agriculture.

Mr.Yadav spoke about the high value vegetable crop program of Horticulture department under the National Agriculture Development Scheme in entire Uttar Pradesh focusing also in Eastern Uttar Pradesh districts. The High value vegetable crop program is running from last 4-5 years in the state and some focussed crops are Cabbage, Capsicum and Tomato. Mr.Yadav said that the Department also trains farmers for low tunnel polynet seedling preparation for High value vegetable crops and through low tunnel polynet seedling method the farmers prepare nursery and seedlings in ridges in low tunnel polynet and production of crop is one or two months before the season and hence farmers get best price from the market.



According to Mr.Yadav the fund limit for this scheme is set according to district as per wise under allocated fund by the government and physical and financial target for the district sets accordingly to fund availability to the district. Department try to outreach the program activity to maximum farmers so that they can benefit to the program activity but some areas of the district can benefited. Mr. Yadav indicating that Department also struggling with shortage of staff. And funds due to limited fund availability and shortage of staff ,the program extension activity could not spread whole district and limited in patches of the district

The program organised by the department is year wise activity in which First year focus on development of hybrid seed for high value vegetable crop program through framers (as hybrid seed distributed to farmers by the department). Hybrid seed have produced 4 times more yield then open type pollinated seed.

Cultivation of vegetable sector is the only sector which cans benefits to farmer's nutrition as well as financial aspects. Productivity of Vegetable crops 8-10 times more than cereals crops. Through vegetable crop farmers can more benefited in terms of nutrition as well as financial aspects.

Mr. Yadav mention about malnutrition in children and women. Malnutrition can be reduced through vegetable crop. Vegetable crops provide more financial strength to the farmer as compare to cereal crops. Department also provide high quality certified seed for seed production of vegetables to farmers. Certified breeder seed take from agricultural universities and central agency and distributed to farmers.

Parallel to vegetable program, fruits program also running from horticulture department. Fruits are also important as vegetables to reduce malnutrition. Fruits are rich in protein, carbohydrates, minerals and vitamins and essential for health.

For Fruits under National Horticulture mission in Kushi nagar district expansion of nursery for fruits plants. Under National Horticulture mission in department provide financial as grant and technical support for small and large scale nursery establishment, Production & distribution of planting material.

Nurseries Department provide to farmers support, tanning of appropriate technology to farmers for high-tech horticulture including protected cultivation and precision farming.

In Kushinagar district Area Expansion of fruits crop of litchi, banana, Guava, Amla and mango. Especially for banana Eastern UP district and tarai district of UP have higher production of banana than Maharashtra State.

Mr. Yadav also told about infrastructure development scheme of department like cold storage development. Like onion produce in Rabi and Kharif seasons and store in cold store under national horticulture mission.

Under the Area Expansion program in First year ,then maintenance of crop by doing arrangements of nutrients of fruit crop, gap filling due to mortality of plants , arrangements of irrigation (provide grants) done in second year.

Another program run by department is honey bee farming for unemployed /farm less farmers. Seminar and Training program for unemployed /farm less farmers in camps organised under supervision of KVK scientist, agricultural university scientist.

Department regularly organise seminar, training program, awareness program, exposure visit. In Exposure visit program farmers are selected and visited, trained for new technology, best practices to agriculture universities, kvk and best practices places all over the India.

Mr. Yadav also told about program of medicinal plant farming like alovera, white musali, ashvghandha , nursery establishment for farmers through subsidy .

Mr. Yadav also told about program of organic farming, training of formation of organic manure nursery establishment for farmers through subsidy under nation Horticulture mission.

Mr. Yadav also told about program of drip irrigation, micro irrigation technology for farmers.

Mr. Yadav also told about financial support for guard, tillers and small tractors under program of farm mechanisation for farmers.

SCHEMES OF NABARD

MR. ASHUTOSH KUMAR, ASSISTANT GENERAL MANAGER , NABARD, REGIONAL OFFICE UTTAR PRADESH

PLP Plan, activity, NABARD scheme, development programme, linkages to improved livelihood

Mr. Ashutosh in his presentation highlighted the activities and Schemes of Nabard and linkages to improved livelihood undertaken by the Nabard in various sectors in agriculture

Mr. Ashutosh told about Nabard which is the institution which engaged in credit planning, credit monitoring and development of agriculture and rural sector to other related services. Nabard main role in credit.



Kishan Credit card is credit related to small and marginal farmers product which is very popular and relevant . if farmer have Credit card than he can use the credit for next 5 years and farmer will get loan at very concessional amount .

According to govt. of India mandate for KCC up to 3 lack rupee loan whatever small, marginal or medium or other type of farmer available on 7 % interest per anum. On the loan amount 3 % subvention given by govt. of India. Up government also give relaxation of 1% loan interest if loan is taken through UP cooperative society. So farmers can receive loan on 4 % upto 3 lac rupees. Farmers can roll over the loan once in the year and gets rebate on the loan.

For Farm less farmers on having farm on lease can also eligible for kishan credit card under joint liability group scheme of Nabard. Joint liability group scheme Loan is a group loan (group size from 4-10 farmers) under which maximum loan amount is 50,000. Group can take loan as a group of individual in this scheme. This loan is security based loan. Self helper group (10-20 member) can also apply for this loan also.

Nabard have Ware housing receipt loan scheme for small and marginal farmers in which small and marginal farmers get loan against ware housing receipt of crop from ware house and on the behalf of receipt Nabard will loan to farmers on 7 % loan interest. Here 3 % subvention relaxation so effectively farmers can get loan at 4% interest so farmers can sale their farming product at best market price and farmers bargaining power may be increase .

Mr. Ashutosh Kumar suggest not to take subsidy because if farmers have invest their money , they are surely best care of the farming unless if they get subsidy they will less care of their crop and productivity reduce.

SCHEMES OF FISHERIES DEPARTMENT AND LINKAGES TO IMPROVE LIVELIHOOD

**DR. HARENDRA PRASAD, ASSISTANT DIRECTOR FISHERIES (PLANNING),
FISHERIES DEPARTMENT, LUCKNOW, UTTARPRADESH.**

Dr. Harendra in his presentation highlighted the activities and Schemes of Fisheries Department, Uttar Pradesh and linkages to improved livelihood through Fish farming .

Dr. Harendra link fisheries directly to rural activity as 79 % population of Uttar Pradesh lives in rural areas. Especially in Eastern area where all selected district are flood affected having water logged area which are very promising in case of fisheries development or fish farming.

Dr. Harendra discussed Blue Revolution (Fishery), and Pink Revolution (Prawns) . According to Dr. Harendra about 60 population of country is fisherian and Uttar Pradesh have very vast resource of fisheries' production. Uttar Pradesh

has 11.52 lakh ha water bodies which can be potentially used for the fish production. In the state, potency is much higher as far as Inland Fishery is considered.

Dr. Harendra highlights the area of Fisheries which ensure food security and helps to fights against malnutrition as fishes are very good source of proteins. Selected Easter district are backward district and majorly population suffer from malnutrition. Fisheries which ensure development of sustainable rural livelihoods and providing entrepreneurship opportunities to rural youth and rural women. Fisheries are only sector in eastern Uttar Pradesh which change the scenario of problem to opportunity in case of water logging. Fisheries is a grossly underutilized resource for Easter Uttar Pradesh . Dr. Harendra discussed the aquaculture and fisheries resources, their utilization, productivity and potential. According to him aquaculture resources of community ponds in UP 1.61 lac ha area having potential of 10 ton /ha/year. Other resources are private ponds, department of fishery , irrigation land and local water bodies.

Dr. Harendra told about fisheries - resources, utilization, productivity and potential in the Uttar Pradesh state. Reservoir, Lakes, Ox-bow lakes, Water logged areas, Riverine wetlands and River are the main resources.

Dr. Harendra discussed in details about reservoirs of Uttar Pradesh. According to him 90 reservoirs with an area of 1.396 lakh ha area distributed among 17 districts. The 04 large reservoirs, viz., Rihand, Mathatila, Kalagarh, and Saradasagar, occupy 71196 ha. Sonbhadra district with 52000 ha has the largest area under reservoirs on account of the imposing presence of Rihand reservoir. The medium impoundments, having a total water spread of 44993 ha, are distributed in the districts of Jhansi, Varanasi, Sonbhadra, Banda), Mirzapur Hamirpur Bijnaur and Pilibhit 40 small reservoirs have been documented with a total area of 20845 ha, dispersed almost uniformly in the districts. Mirzapur ,Hamirpur and Gonda districts have the maximum number of small reservoirs. According to Dr. Harendra , department of Fisheries have vision transforming rural poverty to prosperity through fisheries and aquaculture development.



Dr. Harendra discussed about National 12th Plan Objectives regarding fisheries where enhancing production of fish on an environmentally sustainable and socially equitable basis. One of the objective of 12th plan conserving aquatic resources and increase genetic diversity and preserve of health of ecosystems. With the help of Fisheries can increase the per capita availability and consumption of fish to about 11 kg/capita/annum and also securing and increasing employment opportunities in the fisheries sector.

Improving overall governance and management of fisheries sector through institutional strengthening and human resource development Institutional strengthening will include policy, legislation and organizational aspects. Dr. Harendra also discussed action plan for how to achieve the targets.

Dr. Harendra also discussed strategy for development of fisheries . Dr. Harendra also discussed about possible source of funding . which may be National Fisheries Development Board, Central Sector Schemes, RKVY, MGNREGA, State funding , Nationalized Banks , Private Sector – Entrepreneurs and Farmers. Dr. Harendra also discussed about scheme of FFDA(Fish Farmers Dev. Agency Scheme), Mobile fish Parlours Scheme ,Cat fish farming Scheme, Prawn Farming Scheme, Fisheries Develop. in Waterlogged areas, RKVY Scheme, NMPS Scheme and NFDB Scheme which having different percentage of subsidy .

PROCEEDINGS' OF DAY-2, 28TH FEBRUARY, 2015, LUCKNOW WORKSHOP

The second day began with the first presentation of Dr.V.V.Sadamate, Convergence Expert, MoRD/WB project, followed by Dr.Atar Singh sharing activities of KVK's; followed by presentation of Husk power systems by Mr.Gaurav Jain. Fourth presentation was by Dr.S.P.Singh on Agri clinics agri business (ACAB), followed by Dr.Sanjay Kumar's presentation on Medicinal and aromatic plants. This was followed by a detailed action plan for NGO's by Mr.Abhay Gandhe, SDTT and a vote of thanks by Dr.Jyoti Parikh, ED IRADe.

1. CONVERGENCE & PROGRAMME DELIVERY OF AGRICULTURE & ALLIED SECTOR PROGRAMMES AT DISTRICT LEVEL & BELOW.

Dr.V V SADAMATE, AGRI. CONV. EXPERT, MORD/WORLD BANK PROJECT

Dr.Sadamate in his presentation highlighted the need of convergence in the agriculture sector, he highlighted that convergence is a process that results in the achievement of common objectives through Joint strategies, Sharing infrastructural, human and financial services resulting in value addition to the task performed and help in a Co-ordinated delivery to the targeted clientele.

He spoke on the need for convergence is to obtain synergies required to move towards more integrated approach, to combine comparative strengths of converging partners for mutual benefits, Increased Community Participation, income enhancement, realizing incremental outcomes and wider impacts across the sectors as opposed to individual departments and agencies working in their own silos.

He stressed that the critical levels for convergence are that there has to be 'Policy Appreciation' at National level, Strategic options at the State levels and Operational mechanisms at the district level and below. It matters most at the Block/Cluster level where actual implementation is envisaged to address common concerns & mutual benefits are realized fast.

Leading convergence is a major issue and is only possible by Dialogue between relevant Central Ministries and if State Nodal Agency provide a platform to Line departments and Decision makers, develop Joint Guidelines for securing convergence, Enable District level key coordinating authority (DM,Collector,DPC,CEO/DDO-ZP) as applicable in a State for



decisions on convergence, Functional responsibilities and modalities would need to be clearly spelt out on a matrix / MoU mode for convergence to take place. Principal Implementation Agencies and Field Agencies have to carry it forward & make it happen on the ground level. Agriculture being a multi sectoral work, sectoral convergence is of utmost value, Possible Sectors for Convergence in Agriculture and allied activities catering to Agriculture, Horticulture, Animal Husbandry, Dairy, Fisheries, NRM/Climate Change, Water Resources / Minor Irrigation, Environment & Forestry, Credit/Risk Management, Rural Development, Panchayati Raj, Technology Validation & Dissemination all need to converge for better outcomes.

Various schemes are run by the Central Ministries and corresponding State level departments they all need to converge at some point so that there is no overlapping and various schemes like GOI Schemes- CS & C.Sponsored, State Sector Schemes and Programmes, Programmes of Credit/Input support Agencies, Companies & Corporates, Programmes of NGOs, Programmes of FOs, Externally Aided/Int. Agencies Projects all need to converge. Some of the sectoral schemes targeted for convergence were also discussed for e.g. in **Agriculture**: RKVY, NFSM, NMO&OP, NMSA; **Horticulture**: NHM; **Animal Husbandry & Dairy**: NDP & Livestock health and Disease Control Programme; **Fisheries**: NFDB Programmes; **NRM/Climate Change**: NMSA, NICRA; **Environment & Forestry**: Green India Mission, **Credit/Risk Management**: Crop Insurance, NABARD Schemes; **MoRD Programmes**: MGNREGA,NRLM; **Panchyati Raj Progs**: BRGF; **Water Resources/Drinking Water Supply**: Repair, Renovation & Restoration of Water bodies, National Rural Drinking Water Programmes. **Technology Validation & Dissemination**: ATMA & KVK programmes - Related schemes of State Government, Related schemes of other agencies.

He highlighted the need for studying and analyzing existing Instruments available and Priority Setting based upon these. Documents such as Comprehensive Dist. Agril. Plan(C-DAP), Strategic Research & Extension Plans(SREPs) and Block Action Plans (BAPs) of ATMA, Potential Linked Credit Plans (PLP) of NABARD, Micro Level Farming Situation Analysis Reports of Krishi Vigyan Kendras(KVKs) need to be reviewed.

Institutional backstopping and Linkages is an important step in convergence and Involvement of Possible Institutions would go by the following considerations - Core Strength of the programme, Convergence needs and required technical backstopping. Some important GOI Institutions / Organizations like NIRD, NIH, NHB/NDDDB/NFDB/NABARD and ICAR Institutes/Centres. State level Institutes like State Development Admn.Training Instts, State Agri /Horti / Vet Universities, State level Management Institutes like SAMETIs, State level Training Centres of Development Departments like SIRDs. District/Field level Centres/Organizations like Krishi Vigyan Kendras, ATMAs and BTMs and BTTs, DWCDC, PIAs, WDTs and WCs, Credit & Input

Support Agencies, Cooperative Organizations, Field Functionaries, Non Government Organizations and Farmer Organizations need to converge.

He stressed on developing a matrix approach to convergence for proper planning and monitoring of Nodal departments, their schemes and timelines for programme delivery. QEAC and QEA and M&E of programmes. Steps to operationalize the matrix include detailed instructions to the Nodal and Converging Departments, would need to be worked out and shared, dummy exercise would need to be carried out on a limited scale & Field pilots would need to be taken up on Convergence and propose expansions once the systems and modalities are standardized and accepted.

The enabling actions by the state & converging operators would be to work out convergence arrangements at all levels, Issue necessary instructions to field formations, Organize orientation programmes- (internal & External), takeup training & CB Strategies, thematic modules, MoU based convergence and arrangements, Infield implementation, Stake holder & Farmer participation and M&E of Convergence impact.

Proper programme delivery in the context of Convergence is possible when there is Clarity of Roles and responsibilities of both public & private agencies, there are proper strategies for dis-advantaged areas/groups, more use of other 'extension change agents', scientific back up & feedback analysis, Training & CB Strategies, thematic special modules, Promote Farmer Empowerment, Focus on Livelihoods and income generation and Strong Information dissemination.

Dr.Sadamate finally concluded his presentation by saying that convergence is a must, for obtaining incremental benefits from multi-sectoral programmes, possible only when there is proper knowledge of the Concept and Operations and Instructions for Convergence at various levels is well defined, follow the Matrix approach to convergence as part of the planning process, proper orientation of all stakeholders – Internal and External. Proper implementation of convergence and stakeholder participation. Need for a regular M & E of Convergence and there is proper programme delivery in the context of Convergence. As a next logical step SDTT-IRADE-GOUP should consider a few pilot projects on Convergence in the project area.

2. KVK ACTIVITIES, IMPROVED TECHNOLOGIES & LINKAGES WITH FARMER DR. ATAR SINGH, ZONAL PROJECT DIRECTOR, ZONE-IV, KANPUR

Dr. Atar Singh in his presentation highlighted the activities undertaken by the KVK's in various sectors in agriculture. He appraised that KVK works in sectors like home science, animal science, agriculture extension, horticulture, plant protection, soil science, agronomy, agriculture engineering, fisheries, and research and also in technology demonstration and field level activities.



In Home science sector KVK operates on the Role to sensitize women working in agriculture, Working on reducing drudgery, developing knowledge and skills, household nutritional security (Nutritional garden concepts-back yard farming), Ergonomics of women, Empowerment of women through SHGs, Working in association of other crop and livestock scientists, Not confined only to stitching, embroidery, Jam, Jelly activities, and Biophysical & socio-economic impact of activities.

Under animal science KVK Analyzes the situation, synthesize the information, develop the solutions in a system perspective for a micro farming environment. It works for creation of block & village wise information through PRA for Productivity, Population ratio, Health hygiene, Status of feeding, Availability of fodder, Quality of breeds and Mapping of diseases. Concentrating more on OFTs in relation to use of mineral mixture, disease management, fodder quality improvement, improvement in fertility status of dairy animals. Developing educated rural youths as paravets. Animal camp in association with line departments. Emphasis on small animals e.g. poultry management, rabbitary, goat rearing, etc. for employment generation. Whole village concept.

Under agriculture extension the KVK works on FOs/Farmers groups/Federations (Commodity based), formation of farmers' field schools, establishing linkages with line departments, research institutes, NGOs, etc, publication of periodicals/News letters, conducting case studies/impact assessment, In service training, Training of private dealers, developing innovative extension methodologies, agro-eco-system analysis, organization of training programmes, farmers fairs, agriculture exhibitions, field days and collaboration with all the scientists.

Under horticulture sector KVK operates for the development of nursery at KVK farm, development of nursery at farmers fields, training of rural youths in grafting, budding, etc. and mali training, qualitative production of fruits and vegetables, selling of seeds/saplings/seedlings of fruits, vegetables, forest trees, aromatic and ornamental plants and problem based OFTs/FLDs.

Plant protection is another area of operation of KVK's where they focus on IPM, bio control, quality production, Formation of Plant Protection SHGs/FFSs, Production of bio agents, Problem based OFTs and FLDs and diagnostic agri clinic and advisory services. In soil science KVK activities focus on IPNM, analysis of targeted soil samples (1500 annually), development of fertility maps, recommendations as per soil test basis, problem & soil test based OFTs/FLDs and campaign on vermi compost, bio fertilizers, green manure, NADEP, etc. In agronomy the focus is on seed production at farm, truthful seed production at farmers fields, introduction of new varieties/technologies and problem based OFTs and FLDs.

In agriculture engineering KVK works for Introduction of different kinds of machines (small implements), Drudgery reduction, Related FLDs and OFTs especially conservation technologies and Training on use & maintenance of machines. In fisheries sector KVK works for development of Composite fish culture, Proper stocking (ratio), Supplementary feeding, Predators control, Production of fingerlings and Scope of prawn development.

Some of the technological interventions undertaken by KVK are for Paddy-PRH-10 variety wherein they have prepared raised mat type nursery for transplanting and transplanting using paddy transplanter. Demonstration of paddy cum fish culture in flood tolerant paddy varieties. Scented Paddy variety demonstration (Pusa basmati and sugandha). Promotion of hybrid varieties of rice. Improved irrigation technologies. Breed improvement in livestock. Entrepreneur development through promotion of flowers like Gladiolous, ornamental plants.

Agriculture conservation activities like protected cultivation (poly house), integrated farming techniques (Fish-poultry-vegetable), moisture conservation by plastic mulching, rain water harvesting. Direct seeded rice, zero till techniques are undertaken. Technology demonstration for pulse productivity, maize demonstration under ISOPOM, activities under NICRA, ICT activities, Linkages with farmers – trainings, films, clubs, melas.

KVK also links up with various research institutes from time to time like IIPR, Kanpur, Indian Institute of Technology, Kanpur, IGFR, Jhansi, CRIDA, Hyderabad, DMR, New Delhi, IIVR, Varanasi, Van Vigyan Kendra of forest department, National Rainfed Area Authority (NRAA), MANAGE, Hyderabad, SAU's (GBPUAT, SVPUAT, CSAUAT & NDUAT), SCISA, Nehru Yuva Kendras, DWR, Karnal, IARI, New Delhi, CSSRI, CISH, Lucknow and IISR Lucknow.

3. GASIFIER BASED POWER GENERATION FOR RURAL AREAS BY HUSK POWER SYSTEMS, PATNA MR.MANOJ SINHA, MANAGER

The presentation started with Mr.Manoj showing a short video of their system operating in Africa and the benefits accruing to the rural community. The Vision of the organization is to enable socio economic development by providing “on-demand” affordable power

Husk Power Systems provides renewable power using decentralized mini/micro grids. They have around Six years of experience in managing mini-grids in rural areas and are currently managing over 80 plants that provide electricity to over 300,000 people spread across 350 villages. HPS have established strategic partnership with Shell Foundation and IFC Advisory for establishing Husk Power University (training program). HPS has also launched franchise model and have 17 franchise partners. The company has footprint in India, Nepal, Uganda and Tanzania.



HPS is managing Managing Mini-Grids and Communities with 3 Phase AC Mini Grid where wires that extend upto 1.5km and DC Micro Grid where wires extend upto 300m. The Mini Grids function as a Build and Wire the village system, Pay-as-you-Go System along with Recruitment and Training to local community members, who are also responsible for Maintaining the network and educating the community on its use.

Technology that Powers HPS Mini and Micro Grids comprises of two systems namely the Biomass System and the solar mini grid. The biomass system has the World’s lowest total capital cost and is a Proprietary System wherein HPS designs its own gasifiers and transmission network, suitable for three phase supply, the project has a breakeven in a 4 years period due to low capex. The Solar Micro Grid panels caters to 10-12 households in a 300m radius, this is also a Proprietary System with very low cost smart pre-paid meter and a Breakeven in 5 years.

Hybrid Model to Enable “On-Demand” Power use day time solar and night time gasifier mode, suitable for cold storages also.

The Gasifiers can use multiple types of feedstock such as rice husk, wheat husk, mustard stems, corn cobs, wood chips etc. The system has a unique Filtration System that allows maximum filtration of tar which results in longer life of genset. The plants can be remotely monitored leading to better plant performance. Pre-paid meters are recharged by using tablet based application and it also gives protection against over voltage and short-circuit.

Use of three phase genset meets the light loads as well as heavy loads such as irrigation pump, flour mill etc. 1.8kg of husk is required to generate one unit of electricity. The total plant setup requires less than 3000 sq. ft of land. Residue of husk after gasification process is known as char. This Char can be used for briquette making.

Local population is trained and recruiting to generate employment opportunities. Women are involved in making Incense Sticks from the ash generated.

**4. AGRI-CLINICS-AGRI-BUSINESS (ACAB), AS A SOURCE FOR ENTREPRENEURSHIP DEVELOPMENT
DR.SHAILENDRA PRATAP SINGH, NODAL OFFICER/SECRETARY, ACAB TRAINING INSTITUTE, SMGGS.**

Dr.S.P.Singh shared his experience in promoting ACAB's as an innovative method of generating agri-entrepreneurs and in improving the livelihoods and as a additional income source. Mr.Singh stated that his organization has trained around 4000 agriculture graduates and out of which 2500 persons have setup ACAB's. ACAB's can help farmers in technology transfer, availability of seeds, fertilizers, soil quality monitoring and other field level inputs as required. ACABs work in all sectors like agriculture, horticulture, animal husbandry, agro forestry, fisheries, poultry, etc.



ACAB helps to avoid middle men and distress sale through development of ACABC center as a place of storage and market hub for the farmers produce.

The Ministry of Agriculture, Government of India, in association with NABARD has launched this unique programme to take better methods of farming to each and every farmer across the country with a theme of Earn money and prestige by becoming a consultant to farmers. Funds for individuals group or for project funding as venture capital is as per the revised Scheme document of Ministry of Agriculture and Co-operation and NABARD. Bank loans are also available for Agriclincs and Agribusiness Centres. An individual or a group of individuals is eligible for availing of these loans. Depending on the type of venture Agriclincs and Agribusiness Centre Loans can be repaid within 5 to 10 years as per installment plans. The rate of interest, margin and security on loans will be decided by the respective bank, as per RBI norms. The present project cost for subsidy is Rs.20 lakh for an individual project and Rs. 25 lakh in case of extremely successful individual projects and to Rs.100 lakh for a group project. In case of loans up to Rs. 5 lakh, no margin money is required as per present norms.

This was followed by a presentation of an ACAB farmer Mr.Laxmi Narayan Singh, who operates a poultry farm with ACAB support. The farm has a capacity of 4000 hens with a ready market. The litter produced is also sold as farm manure generating additional income. The mortality rate among the chickens varies from 10-15% annually.



5. MEDICINAL AND AROMATIC PLANTS BASED AGRIBUSINESS OPPORTUNITIES IN EASTERN U.P.

DR. SANJAY KUMAR, SCIENTIST & HEAD BUSINESS DEVELOPMENT, CSIR - CENTRAL INSTITUTE OF MEDICINAL AND AROMATIC PLANTS (CIMAP), LUCKNOW

Dr.Sanjay Kumar spoke on the importance of Medicinal and aromatic plants as a source of agri-business for eastern UP. He said that CIMAP is a frontline plants research lab of CSIR dedicated to high quality research in the area of biological and chemical sciences and extending technologies and services to the farmers and entrepreneurs. Labs are located at 5 locations in the country to cater to development of medicinal plants are fully equipped with state of art infrastructure and field demonstration capabilities to promote medicinal and aromatic plants. He stressed that there is a tremendous opportunity in promoting these plants and there is a growing market for medicinal plants. Opportunities for Mint, Artemisia annua - an antimalarial drug plant, Ashwagandha – a health tonic, Khus, Mentha, Palmarosa and Basil(Tulsi), Asparagus, Rose, Aloe, their economics and potential, products manufactured, gender enabling manufacturing were presented.



6. DEVELOPING BUSINESS MODELS FOR THE SUGGESTED INTERVENTIONS MR.ABHAY GANDHE, HEAD LEARNING AND PROGRAMME, SDTT

Mr.Abhay Gandhe then presided over the procedure for implementing these interventions suggested by IRADe to be taken up by partner NGO's in their districts. For each of the discussed new opportunity like

(i) Tie-ups with KVK, intensive collaboration, National model demo project and making a center of excellence block were suggested.

(ii) 2-3 projects would be identified in the districts for setting up of distributed energy generation projects in the NGO clusters.

(iii) Promotion of ACAB and activities would be explored (Poultry, etc.)

(iv) Scope for 5 medicinal plants with ready market would be identified and would be taken up in the clusters, intercropping of medicinal plants to stop Neelgai intrusions like *Vetiver* (Khus) will be explored.

(v) Bamboo based sanitation structures need to be explored and promoted.

(vi) Watergrid in village through Jain Irrigation systems.

(vii) Options for reducing water consumption in Mentha crop from the present levels and bringing it down to 10% only.

(viii) Incremental increase in income levels from these and other options need to be brought out by the NGO partners for next three years.



7. VOTE OF THANKS – DR JYOTI PARIKH, EXECUTIVE DIRECTOR, IRADe

The day ended with Dr.Jyoti Parikh making the concluding remarks on how IRADe can help SDTT and UP Government and NGO partners in taking forward their work with concerned Ministries at the Center and at State level, what are the policy level changes required so as to have a sustained ground level impact of these recommendations. IRADe can help in developing other district level plans as a lot of learning has taken place and a broad framework has been put in place. Helping in developing business plans if required can also be taken up. Dr.Parikh then thanked Mr.Abhay Gandhe and SDTT, all the steering committee members, NGO partners, and all IRADe staff involved in the project for making the workshop a grand success.



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