

**National Workshop on Clean Development Mechanism and
Carbon Trading Opportunities in Agriculture and Allied Sectors
8-9 May 2008
Central Research Institute for Dryland Agriculture, Hyderabad**

A National Workshop on Clean Development Mechanism and Carbon Trading Opportunities in Agriculture and Allied Sectors sponsored by Indian Council of Agricultural Research was held at Central Research Institute for Dryland Agriculture, (CRIDA) Hyderabad from 8-9 May 2008. Delegates from ICAR institutes, State Agricultural Universities, NGO's, State Agricultural Departments and progressive farmers participated in the two-day workshop. The basic objective of the workshop was to identify potential mitigation activities and to explore the possibility of developing clean development projects in agriculture and allied sectors and also to familiarise the participants about various aspects of kyoto protocol CDM, and carbon trading in agriculture and allied sectors. The workshop was attended by about 60 participants including scientists from host institute CRIDA. The programme of the workshop is enclosed as Annexure-I and the list of participants along with their contact details and feed back is given in Annexure-II.

Inaugurating the workshop Dr. C.D. Mayee, Chief guest emphasized the importance of climate change for Indian agriculture and how we should reorient our research programmes to face the new challenges. Our scientists should be well informed and conscious of the global developments in this important area and their impact on Indian agriculture, Dr. Mayee advised.

The workshop was organized in five technical sessions in which distinguished delegates presented their views through power point presentations followed by discussions. The session wise recommendations are presented below.

Technical session I: Climate Change, Kyoto Protocol and Clean Development Mechanism

Dr. A.K. Gogoi, ADG (Agronomy) chaired this session. Dr. M Vanaja, Senior Scientist, CRIDA was the rapporteur. Four papers were presented in this session. Dr. Y.S. Ramakrishna, Director, CRIDA presented first paper on Indian and global scenario on climate change, recent trends in rainfall and temperature variations and its implications for crop production. Dr. G.G.S.N.Rao,

Project Coordinator, AICRPAM made a presentation on the impact of climate change on Indian agriculture based on the research carried out under network project on climate change. The impacts of elevated CO₂, heat wave, cold wave and extreme weather events were explained in detail. The third paper on green house gas emissions from agriculture sector in India by Dr T. K. Adhya from CRRI, Cuttack provided the quantified information on emission of important greenhouse gases from paddy ecosystem, enteric fermentation etc. and summarized the research findings that minimize these emissions. The relative importance of CO₂, methane and nitrous oxide emissions from different sectors were presented. Dr. Indu Murthy from Indian Institute of Science, Bangalore highlighted the importance of addressing climate change effects for ensuring sustainable development. She also explained in detail the operational mechanism of CDM and how it has so far benefited only the industry and the need for broad basing the mechanism so that it also benefits the agriculture sector and rural livelihoods. Based on the presentations and in-depth discussion the following recommendations emerged:

- Precise quantification of GHG emissions and mitigation strategies from different sectors in agriculture has to be treated as a high research priority as the outputs will feed into the national CDM strategy and the open up carbon trading opportunities for the country.
- Special emphasis on mitigation options for reducing CH₄ and N₂O emissions in rice cultivation is needed laid due to its significant contribution to total green house gas emissions.
- Quantitative assessment of crop responses at different growth stages to enhanced levels of CHGS, rainfall and UV-B radiation should remain a long term research priority for the country and specific groups / networks are to be formed for pursuing such research.
- The extent to which alternate land-use systems (plantation crops, agro-forestry etc.) increase carbon sequestration need to be studied. How much agricultural area can be replaced by forestry without compromising food security needs to be quantified.
- How much carbon is conserved by reduced tillage in different agro-eco regions needs to be quantified. Suitable policies for encouraging farmers to improve soil health and carbon sequestration needs to be formulated.
- Alternatives to burning of crop residues needs to be explored as 90% of the CO₂ emissions from agriculture are from burning residues, which also results in substantial loss of plant nutrients.
- Management practices, which result in substantial reduction in green house gas emissions in paddy ecosystem such as intermittent application of water, application of sulfur, potassium, application of slow release fertilizers needs to be adopted on a wider scale.

- Strengthening of National CDM authority by extending its ambit to cover social, economic, environmental and technological well being of the population in addition to mere reduction of CHG emission.

Technical session II: Carbon trading in agriculture sector: Opportunities, issues and strategies

This session was chaired by Dr. C.D. Mayee, Chairman, ASRB, co- chaired by Dr. A.K. Gogoi, ADG (Agronomy) and Dr M. Osman, Principal Scientist, CRIDA served as the rapporteur. Seven papers were presented in this session. Dr V.P. Singh from ICRAF, New Delhi presented a paper on design and best practices for community carbon forestry poverty reduction project. He stated that ICRAF has come out with a methodology kit on area-based approach. A paper on generating carbon credits through technology interventions with a livelihood perspective was presented by Dr. B. Venkateswarlu, Principal Scientist from CRIDA. He emphasized that linking carbon credits to livelihood projects in a cluster of villages will be the best approach to benefit entire community. Presentations were made on the CDM potentiality in livestock sector by Dr. Smita Sirohi, NCAP. These mostly include additives in the feed to minimize methane emission. Other presentations include the potential of land use change and agroforestry by Dr. G.R. Korwar, CRIDA, on conservation agriculture by Dr. K.Srinivas from CRIDA, on the forestry and bio energy plantations by Dr. Paul Verghese, TERI, New Delhi and on energy efficiency in agriculture by Dr. I. Srinivas, CRIDA. Based on the presentations and in-depth discussions following recommendations emerged.

- Agro-forestry systems are known to sequester high carbon and offers significant carbon trading opportunities. The crown cover requirement may be reduced from 30% to 15% to cover boundary and shelter belt plantations.
- ICAR and other donor agencies should support for standardizing methodology & capacity building as livestock in general and dairy sector in particularly offers huge CDM potential that would benefit millions of poor. Peri-urban dairies in particular have huge potential in investing on manure and feed management to reduce methane emission.
- There is a need to develop joint proposals with ICRAF by employing the methodology developed by them for Carbon Poverty Reduction Projects. The methodology is suited to small farmers and can provide additional benefits through carbon credits.

- There is a need to replicate approach followed in watershed programme in Philippines in rainfed areas where stream bank erosion control and afforestation in catchment areas were submitted as a project and registered with UNFCCC.
- The complete lifecycle approach of energy balance need to be applied for making agricultural practices like tillage, irrigation and fertilization and land uses change eligible for carbon trading under CDM.

Technical session III: Methodologies and case studies

In this session, four invited papers were presented. The first was on Reforestation of degraded lands through biomass plantation for carbon credits through farmer's participation- a case study in Khammam district by Dr. H.D. Kulkarni, General Manager, ITC-PSPD. This is a model project registered with UNFCCC where large number of small farmers are involved in pulp wood plantation activity. CDM-Biogas programme-A means of economic independence of women was presented by Mrs. Sudha Padmanabha, Vice President, Velcan Energy Private limited, which was another successful project from India where payments for carbon credits started flowing to the beneficiaries. A paper on voluntary carbon markets and carbon trading was presented by Mr. Peter Thettayil. In this system, the value of CER's are low but there is more flexibility in claiming credits. Mr. T.R. Shanmukha from Veda Macs, Hyderabad presented a paper on Bio-carbon fund- Indian experience, regarding a forestry project involving farmers in Orissa. This is one of few projects approved by World Bank under the Bio-carbon fund. Dr S. M. Virmani, Former Agrometeorologist, ICRISAT chaired the session and Dr K V Rao, Senior Scientist, CRIDA served as the rapporteur. The salient points emerged from the presentations are:

- Biomass based biogas plants are important in biogas based CDM projects for ensuring success in view of the shortage of dung at many places.
- Stakeholder consultation, verifiability, efficient assessment strategies, community participation are crucial in ensuring sustainability of CDM for agriculture.
- Methodologies for agroforestry systems in voluntary system are lacking and needs to be developed at the earliest. Capacity building and awareness regarding voluntary markets in carbon trading are important.

Technical Session IV: Project development: Issues and strategies

In this session, papers steps in project design, by Mr. Surajit Bose of Price Water House Coopers, Monetising CDM benefits and trading carbon credits through commodity exchanges by Mr. Sudip Rathee of NCDEX, Validation, and verification requirements by Mr. Balasubramaniam of DNV were presented. Mr. G. Ramesh, Manager, NABARD summarized the financing opportunities for carbon projects. The session was chaired by Dr V P Singh, ICRAF South Asia, and Dr K. Srinivas from CRIDA was the rapporteur. The major recommendations of this session are:

- Though opportunities exist for CDM in Agriculture, there are no approved methodologies.
- In most agricultural and allied sectors millions of small holders are involved, and hence aggregation is important for any project. Research is required on ways and means of addressing the additionality clause.
- Voluntary Carbon markets seem to be more encouraging in agricultural context. Efforts could be made to expand the basket of options eligible for credits under this system so that communities can benefit quickly.

Technical Session V: Plenary session and identification of researchable issues and potential CDM projects in livelihood perspective.

In this session the way forward for further action and researchable issues were discussed. Dr. S.M. Virmani chaired and Dr. Y.S. Ramakrishna co-chaired. The discussion was initiated by a summary presentation by Dr. B. Venkateswarlu, Principal Scientist, CRIDA who listed the possible opportunities in different sectors of agriculture, and the researchable issues subject wise. Three panelists viz., Dr. V.P.Singh, South Asia representative ICRAF, Dr. H.D. Kulkarni, General Manager, ITC-PSPD, Mr. T.R. Shanmukha of VEDAMACS, Hyderabad shared their views on various aspects of the carbon trading. In general all have opined that lack of methodology is a major constraint in agriculture and ICAR and other public research organizations should take initiative to fill this critical gap through well-planned research projects. Involving in the private sector, farmers and project developers. Representatives from TIFAC, New Delhi have informed that DST has a provision to fund such methodology development projects. Dr. V.P. Singh has emphasized that we must pilot some projects with the available methodology developed by ICRAF. Dr. S.M. Virmani, Chairman in his closing remarks stated that although there is some potential for CDM projects in agriculture, there appears to be lot of constraints and hurdles in project development, particularly from the developing countries. He called for time bound action plan on specially identified research themes to contribute to the country specific methodology. Only through a collaborative action between researchers, project developers and stake holders we can move forward in this important area. After two days of deliberations the final recommendations are summarized below:

FINAL RECOMMENDATIONS

1. The workshop noted that although India has seized the CDM opportunities in an effective manner compared to many developing countries, we have not made much progress in developing projects in agriculture. Therefore, this requires urgent priority. The experts observed that one of the main obstacle for projects in agriculture is the lack of approved methodology for PDD development. Hence, research is required in methodology development. Participants from TIFAC, New Delhi informed that the DST can fund projects on methodology development involving ICAR institutes, farmers, NGOs and private industry.
2. The main Carbon Trading opportunities in agriculture and allied sectors identified are:
 - Biogas and Biomass in rural household energy.
 - Efficient manure management for reducing methane emission.
 - Forestry and agro forestry.
 - Energy efficiency in farm machinery and use of renewable energy in farm operations.
 - Studies on livestock nutrition to reduce methane emission.
 - Research on reducing methane and nitrous oxide from paddy eco system.
 - Soil carbon sequestration and conservation agriculture.
4. As a major output of the workshop, it was recommended that we should develop area based projects where different activities in the above areas can be bundled together and credits claimed for the community as a whole. For this, ICRAF has already developed a methodology kit. It was found that such project can be best developed in the NAIP livelihood consortia who are already working in a cluster of villages and are involved in several interventions covering the above. ICAR/ NAIP may take initiative to organize a training for all the PI's of the livelihood projects on the ICRAF's tool kit of area based methodology.
5. ICAR may constitute a committee of experts to identify the methodology needs of different sectors within Agriculture which contribute to PDD development. Scientists from ICAR, private industry involved in carbon trading, PDD developing organizations and officials from TIFAC, New Delhi (who offered to fund the methodology development) may be involved in this committee.

(B.Venkateswarlu)
Workshop Convener
For details visit : www.crida... Find out..

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Opportunities in Agriculture and Allied Sectors

May 8-9, 2008
Central Research Institute for Dryland Agriculture
Hyderabad

Venue: New Conference Hall

Programme

8 May, 2008

0930 hrs	Registration	
	Inaugural Session	Chief Guest: Dr.C.D.Mayee, Chairman, ASRB
1000 hrs	Welcome	Dr.Y.S.Ramakrishna, Director, CRIDA
1010 hrs	Background for the workshop	Dr.B.Venkateswarlu, CRIDA
1025 hrs	Introduction of participants	
1035 hrs	Address by the Chief Guest	Dr. C.D Mayee, Chairman, ASRB
1055 hrs	Vote of Thanks	Dr.J.V.N.S.Prasad, CRIDA
1100 hrs	Tea break	
1130 hrs	Technical Session I	Climate change, Kyoto Protocol and
	Chairman : Dr.Y.S.Ramakrishna	Clean Development Mechanism
	Rapporteur : Dr. M. Vanaja	(CDM)
1130 hrs	Climate change: Global and Indian Perspective	Dr. Y.S.Ramakrishna, Director, CRIDA
1200 hrs	Impacts of climate change on Indian Agriculture	Dr. G.G.S.N.Rao, CRIDA
1230 hrs	Green house gasemissions from agricultural sector in India	Dr. T.K.Adhya, CRRI, Cuttack
1300 hrs	Climate change CDM and	Dr. Indu Murthy, IISc. Bangalore

Sustainable development in India

1330 hrs Lunch

1430 hrs **Technical Session II**
Chairman: Dr.C.D.Mayee
Rapporteur : Dr. M. Osman **Carbon trading in agriculture sector:
Opportunities, Issues and Strategies**

1430 hrs Carbon credit projects for poverty alleviation – Perspectives from International donors Dr.V.P.Singh, ICRAF, New Delhi

1500 hrs CDM with a livelihood perspective: Key issues Dr. B.Venkateswarlu, CRIDA

1530 hrs CDM Potential of forestry sector with CFM and JFM perspectives Dr. Paul Verghese, TERI, New Delhi

1600 hrs Carbon trading opportunities through land use change and agro forestry Dr. G.R.Korwar, CRIDA

1630 hrs CDM Potential of dairy sector in India Dr.Smitha Sirohi, NCAP, New Delhi

1700 hrs Conservation Agriculture and carbon sequestration Dr. K.Srinivas, CRIDA, Hyderabad

1730 hrs Energy efficiency in Agriculture in relation to CDM Dr. I. Srinivas, CRIDA, Hyderabad

9 May 2008

Technical Session III
Chairman : Dr.A.K.Singh
Rapporteur : Dr.J.V.N.S.Prasad

Methodologies and case studies

0930 hrs Reforestation of degraded lands through bio mass plantations for carbon credits through farmers' participation – A case study in Khammam district of A.P. Dr.H.D.Kulkarni, ITC Ltd., Bhadrachalam

1000 hrs CDM biogas programme – A means of economic empowerment of women Mrs. Sudha Padmanabha Vice President, Velcan Energy Pvt Ltd

1030 hrs	Voluntary markets and carbon trading	Mr. Peter Thettayil, Anthyodaya, Cochin
1100 hrs	Bio Carbon Fund - Indian Experience	Mr. T.R.Shanmukha, VEDA MACS Ltd., Hyderabad
1130 hrs	Tea break	
	Technical Session IV Chairman: Dr.V.P.Singh Rapporteur : Dr.K.Srinivas	Project Development: Issues and strategies
1145 hrs	CDM Project Cycle and steps in PDD development	Mr. Surajit Bose, PWC, Kolkata
1215 hrs	Validation, registration and verification requirements of CDM projects	Mr. S.Balasubramoniam, DNV, Hyderabad
1245 hrs	Monetizing CDM benefits - Issues and strategies	Mr.Sudeep Rathee, NCDEX, New Delhi
1315 hrs	Lunch	
1415 hrs	Plenary Session Chairman: Dr. S.M. Vimani Co-Chairman: Dr. Y.S. Ramakrishna Rapporteur : Dr.Sreenath Dixit Panelists: Dr. V.P. Singh, T.R. Shanmukha, H.D. Kulkarni	
	Researchable issues and Identification of potential CDM projects with livelihood perspective	Open discussion to be facilitated by Dr. B. Venkateswarlu, PI (NAIP) and guided by panelists
1545 hrs	Closing remarks by Chairman	Dr. S.M. Virmani
1600 hrs	Close and vote of thanks	Dr. J.V.N.S.Prasad

ANNEXURE-II

National Workshop on Clean Development Mechanism and Carbon Trading Opportunities in Agriculture and Allied Sectors

8-9 May, 2008

Central Research Institute for Dryland Agriculture

Hyderabad

Participants Feed back

S.No.	Name	Organization	Contact	Current area of work	Future plans	Specific area of interest with in CDM	Are you prepared to be in touch with this group in future, formally or informally	If so, what is your interest	What is the best way that the members of this group can remain touch with each other	Your views on how we should go about in harnessing CDM potential in our agriculture sector.
1	Dr. T.K Adhya	CRRRI Cuttack	0671-2367777 Ext.320 0671-2442726 adhvas@yahoo.com	Greenhouse gas emission from Rice based cropping system	<ul style="list-style-type: none"> Proposing new project Research planning and conceptualization 	Agriculture	Yes, both formally and informally	<ul style="list-style-type: none"> Submitting research project for funding Policy research 	E-Newsletter E-mail group	<ul style="list-style-type: none"> Validating mitigation technologies of GHG emissions in agric. Sector in terms of CDM potential Energy audit of cultivation methods to explore CDM potential
2	C.Udaya Shankar	Centre for World Solidarity, Secunderabad	09849638920 Cudayashankar@yahoo.com	Consultancy, Project Formulation & Project Management	Proposing new project involving grass root organisations	All the areas in agriculture and environment	Yes, initially informally hopefully leading to a formal	<ul style="list-style-type: none"> Advocacy and CDM project formula 	Both email group & e-newsletter	<ul style="list-style-type: none"> Integration of energy, livestock and crops/land use for CDM. Integration of CDM into watershed

							partnership	tion (grass roots)		development (second window)
3	Dr. T.Chakradhar	TIFAC, DST New Delhi	011-26592734 09868431555 chakradhar@tifac.org.in	Project support & methodology development	Support for PDD	Agriculture, horticulture & livestock	Either way	<ul style="list-style-type: none"> Funding project for developing methodology, PDD 	E-mail group	<ul style="list-style-type: none"> Developing a concrete methodology first. Identifying specific areas within agriculture and zeroing in on most potential one for developing PDD through brainstorming.
4	Dr. H.D.Kulkarni	ITC Ltd Bhadrachalam A.P	9849496020 hd.kulkarni@itc.in	Pulp wood plantation, Renewable Energy	To take forward the existing project. To go for farm forestry/ Afforestation project.	In ITC CDM is registered by me and 7 projects are registered. Few are issued CER's which are traded. A/R project to take forward.	Both	Knowledge sharing on CDM	Both	<ul style="list-style-type: none"> Brain storm on identifying projects in Agriculture sector and develop plan and methodology followed by PDD etc.,
5	S.K.Sharma	Indian Railways Vijayawada, A.P	sksharma1955@yahoo.co.in	Nil	New projects and planning related to railways	Individual Co2 reduction projects	Yes, Formally or informally	Research Project	email	Nil
6	Dr.S.T.Bapat	Maharashtra Animal & Fishery Science University, Nagpur	besat@rediffmail.com	Teaching under UG and PG courses. Research on effect of trace elements in soil on cattle.	Proposing new project	Livestock	Yes. Formally	Submitting research project for funding	email	<ul style="list-style-type: none"> Group discussions Training of scientists
7	S. Ballasubramoniam	DET NORSKE VERITAS	23418186/23418187 bala.s@dnv.com	Consultancy / Certification /	Being validators/ Verifiers, we are interested	Generally all approved methodologies	Yes, of course. We can help in whatever	Validation/ verification	email	<ul style="list-style-type: none"> By periodic exchange of information on new and possible methodologies

		Hyderabad		Training	in spreading message and capacity building.		way we can			<ul style="list-style-type: none"> • Conduct more training programme.
8	G.Suresh	DOR (ICAR) Hyderabad	9447229472 sureshdor@gmail.com	Research & training of oilseed production systems and seed production of sunflower, safflower & castor including TBO's	Proposing new project	Agro forestry and renewable energy	Yes, both formally & informally	Submitting research project for funding	Email group. Periodical workshops/meetings through some mechanism	<ul style="list-style-type: none"> • The research institutes in collaboration with genuine, grass root level NGO's with improving livelihood options of small farmers as central focus -CDM projects may be designed. • More of such workshops/ meetings to be organized to educate researchers/ scientists.
9	Md.Abdul Aziz Qureshi	DOR, Hyderabad	9966886710 aziz_soil@rediffmail.com	Management of soil fertility and soil biology for better production of oilseeds crops	To propose new project	Agriculture and renewable energy	Yes, formally & informally	Submit research project for funding & advocacy	Email group	<ul style="list-style-type: none"> • Indian agrarian community should be well educated with CDM concept • Transparent system for real beneficiaries i.e. who reduce emissions.
10	Ch.Radhika Rani	NIRD, Hyderabad	040-24008515 9959968602 crr@nird.gov.in	Research on Agrarian reforms and food security. Training on Entrepreneurship in Agriculture, in DPAP areas.	Nil	Agriculture, renewable energy	Nil	Nil	Nil	Nil
11	C.Chandra Sekhara Rao	CTRI, Rajahmundry	9440333480 ccsrao30@rediffmail.com	Research & Extension	Initiating Research	Agriculture, renewable energy	Yes Formally	Member of Network research project	Email group	Nil

12	D.Srinivasa Reddy	CWS, Secundera bad	09963699805 desisri@yahoo.com	NAIP Research cum Extension, Project formulation	Proposing New project, Planning	Horticulture, Agro forestry, Women issues, Livestock	Yes	Submitting research project for funding	Both	<ul style="list-style-type: none"> • Community participatory method of doing. • Creating more awareness and good market opportunities.
13	V. Murali	WASSAN Secundera bad	muralivuyyuru@gmail.com	Extension, Research, Project formulation	Proposing new project on CDM & Carbon trading	Agro forestry, livestock	Yes formally & informally	Submitting research project for funding & policy research work	Email group	<ul style="list-style-type: none"> • Agro forestry in degraded private lands/ assigned lands. • Usage of agro wastes in carbon trading.
14	G.R.Dharmendar	CSA, Secundera bad	27017735 9866508488 dharmendar.gr@gmail.com	Research, Extension, Project formulation as well as advocacy	Conceptualizin g project design, proposing & implementing.	Agriculture water & women	Yes in both ways	Advocacy policy research	Email group	<ul style="list-style-type: none"> • We should be committed to the cause. • Willingness to share ideas, knowledge information & material etc liberally.
15	Dr.D.N.Kamra	IVRI Izatnagar 2	0581-2301318 0581-2585313 09411008904 dnkamra@rediffmail.com	Research & Teaching	Research & teaching to continue	Livestock – Methane mitigation strategies	Yes	Submitting research project	e-mail e-news letter	<ul style="list-style-type: none"> • Reduction in GHG emissions • Social forestry etc
16	GSLHC Prasad Rao	Kerala Agril. University	0487-2371931 0487-2373938 09446573931 kanagmal@yahoo.co.in	Research on Climate Change impact	Proposing new project	Horticulture, Agriculture Renewable Energy	Yes	Submitting research project for funding	Email group	<ul style="list-style-type: none"> • Renewable Energy • Rainwater harvesting
17	Dr.V.Ramesh	CTCRI Thiruvananthapuram	varadharaian_ramesh@rediffmail.com	Research on tuber crops with respect to carbon sequestration and soil erosion	To understand well the concept of carbon trading mechanism and to apply in tuber crops area in Tamil Nadu	Agriculture/ horticulture crops	Yes formally	Submitting research project for funding / understanding 'C' credit in tuber growing soils	Email group	<ul style="list-style-type: none"> • Participation & benefits to farmers must be ensured. • Very clear methodology about the trading of C-credits at base level for annual crops. (tubers)

18	Priya C.Kareemulla	BAIF, Hyderabad	040- 245336405 bai_f_ap @rediffmail.com	Project formulation implementation etc.,	Developing new projects in area of rural development with focus on farmers suicides and water scarcity	Agro forestry, horticulture renewable energy	Yes informally	Validation	Email group	<ul style="list-style-type: none"> • Switch over to low energy low input & sustainable agril. • Harnessing renewable energy sources like solar wind and bio-gas for agril. Mechanization
19	S.K.Rautaray	CIAE, Bhopal	0755-2734731 0755-2733440 09229578517 0755-2734016 Fax SKR@ciaeres.in	Tillage & manure interaction effects on soils	<u>Proposing a project on formulation and processing of animal feed to control Methane emission and</u> Crop residue management	Conservation of Agril. & Animal energy	Yes formally	Submitting research projects for funding	e-new letter	<ul style="list-style-type: none"> • Collaborative programmes for systematic measurement of emissions, soil stability etc., for sequestration.
20	A.N.Deshpande MPKV, Rahuri	MPKV, Rahuri	9502426- 243209 9423325879 ajitkumarnagesh @rediffmail.com	Teaching Research Extension	Initiating research projects	Agriculture	informally	Submitting for funding	Email group	<ul style="list-style-type: none"> • Crop residue management • Saving of energy inputs in agriculture
21	B.Murali Krishna	Green Krishi (NGO) Hyderabad	040- 24536679-80 040-24534888 9885311181	Working on community bio-gas plants for multipurpose uses	Propose new project with community based bio-gas small bundled projects in Medak, Mahaboobnagar, Kadapa and Chittoor	Bio-gas plants for energy manure	Yes	Submitting for funding	Email group	<ul style="list-style-type: none"> • Identify the area and type of project, create awareness among SHGs through NGOs covering Afforestation, Bio-diesel, Bio-gas with live stock integration

					districts of A.P					
22	Dr.M.R.Reddy	Project Directorat e on Poultry, Hyderabad	040-24015651 ext.109 9949573506 PRMADDULA@yahoo.com rmmaddula@yahoo.com	Research	To develop project on impact of climate change on poultry production and adaptation/ mitigation strategies for alleviating Heat stress / Heat stroke on poultry	Poultry (livestock)	Yes	Submitting research project for funding in the area of poultry	e-mail group e-new letter	<ul style="list-style-type: none"> • Can reduce performance losses in poultry • Can increase the growth and egg production in poultry
23	Dr.R.K.Singh	GBPUAT Ranichauri ,	01376-252150 01376-252175 09411142810 rksingh19@rediffmail.com	Agromet advisories	To propose a new project in the field of forestry for the mid Himalayan region of Uttarakhand and designing a course for teaching	Forestry, specially in forests occurring upto 2000 msl in Uttarakhand	Formally	Submitting research project for funding	e-mail	Nil
24	K. Venkataratnam	A.P.Envis on mental Education Center (NGO) Pamarru Kirishna dist. A.P	09440285120 09490995351 apeec@yahoo.com apeec.in@gmail.com	Environmental education for various target groups	Awareness generation activities on CDM particularly among women.	Forestry, Women issues Renewable energy	Yes formally/ inform ally	Submitting action research oriented project for funding, Advocacy	e-mail e-news letter	<ul style="list-style-type: none"> • Conversion of agro crop waste in to energy
25	Dr.B.N.Hazarika	College of Hort. & Forestry, Central Agril. University Arunachal Pradesh	09436850945 bnhazarika13@yahoo.com	Teaching Research & Extension	Initiating research	Horticulture	Yes	Submitting research project	e-mail	Nil

26	AKV RAJAINTHREN (PATTIKATTAR)	Chennai, Tamil Nadu (NGO)	9443091146 Malarum bhoomi@gmail.com	Makkal T. V. is involved in agri. extension activities	Awareness programmes on correct land use to farmers	Agriculture	Nil	Nil	Nil	Nil
27	S.Kumara Krishnan	THATGROW Tamilnadu Herbal & tree growers association (NGO)	24829252 greenshathi@gmail.com	Promoting tree growing as TGS tree growers society	Increase the tree cover through farmers as farm forestry	Agro forestry	Nil	Nil	Nil	Nil
28	Dr.Uma Melkania	GBPUAT Pant nagar	05944-233321 05944-234152 9412170328 umamelkania@yahoo.co.in	Carbon sequestration studies in hill agro ecosystems with watershed approach	Designing a course for teaching, guiding/initiating research on forestry/agro forestry.	Forestry and agriculture, capacity building of communities, methodology development	Yes formally	Submitting research project for funding	e-mail e-new letter	<ul style="list-style-type: none"> Involvement of communities use of indigenous knowledge and benefit sharing.
29	Dr.B.S.Janagoudar	UAS, Dharwad	0836-2448321 ext.254 0836-2779366 bjanagoudar@yahoo.co.uk	Research, Extension	Proposing new project Initiating research on Bio-fuels	Forestry, Agro forestry, Agriculture	Yes formally	Submitting research project for funding	e-mail group	<ul style="list-style-type: none"> Identify a lead center and make a network of interested people. Constant monitoring is a must Use proper expert in functioning project
30	Dr.P.Rakkiyappan	Sugarcane breeding Instt. Coimbatore	0422-2472621 0422-2422292 09786369624 p_rakkiyappan@rediffmail.com	Research	Initiating research and proposing new project	Agriculture (Sugarcane) Renewable energy	Yes	Submitting research project for funding	e-mail group e-news letter	<ul style="list-style-type: none"> Trash composting, organic manuring, micro irrigation, biofertilizer usage, renewable energy-biofuel, bio-diesel
31	Dr.G.Ravindra Chary	CRIDA, Hyderabad	040-24530161 ext.302 9391043437 gcravinha@gmail.com	Research	Could be a network project across AICRPDA network	Agro forestry/ Agriculture	Yes	Network project for funding	e-mail group	<ul style="list-style-type: none"> Identify site specific proven/usable technologies like tillage, green manuring. Critical R&D initiative

			rcgajjala@crida.emet.in							in agro forestry based farming systems – addressing CDM potential at individual / community level.
32	Dr.M. Vanaja	CRIDA, Hyderabad	040-2453161Ext.275 mvanaja@crida.emet.in vanajamaddi@gmail.com	Research	Nil	Agriculture	Yes	Validation	e-mail group e-news letter	<ul style="list-style-type: none"> • By adopting proper crop management practices. • By creating awareness regarding climate change impacts
33	Dr.G.Nirmala	CRIDA, Hyderabad	gnirmala@crida.emet.in	Research, Extension, Project formulation	Proposing new project on renewable energy & design course on building awareness for farmers	Renewable energy, Women issues, Agro forestry	Yes	Submitting research project for funding	e-mail group e-news letter	<ul style="list-style-type: none"> • Agro forestry based farming system. • Use of renewable energy.
34	Dr.K.Kareemulla	CRIDA, Hyderabad	kalakareem@gmail.com	Yes	Yes	Yes	Yes	Policy research	Yes	<ul style="list-style-type: none"> • Help desk in some ICAR Institute. • Training programme at NAARM on PDD preparation
35	Dr.G.Pratibha	CRIDA, Hyderabad	09246208478 pratibag@crida.emet.in Pratibhaagro@Yahoo.co.in	Research	Proposing	Agro forestry and Agriculture	Yes	Submitting research project for funding	e-mail group	Nil
36	Ganta Ramesh Kumar	NABARD, Hyderabad	9490312852 gantarammi@yahoo.co.in	Financing CDM projects and project finance	Nil	Nil	Nil	Nil	Nil	Nil
37	Dr.K.S.Reddy	CRIDA, Hyderabad	9948071805 ksreddy.1963@gmail.com	Research	Proposing new project, initiating research	Water in relation to agriculture /horticulture	Yes	Research project for funding	e-mail group e-news letter	<ul style="list-style-type: none"> • Integrated approach contributing to CDM. • Team approach for harnessing CDM.

38	Dr.G.Rajeshwar Rao	CRIDA, Hyderabad	040-2453161 ext.555 040-24068256 grrao@cridaernet.in	Bio fuel plants	Proposing new project on bio fuel plants based CDM project	Forestry / agro-forestry, Renewable energy (bio fuel)	Yes	R&D project for funding	e-mail	<ul style="list-style-type: none"> Identify the activities in crop/tree production which reduces GHGS & increase energy efficiency. Validating such activities to earn carbon credits.
39	Dr.M. A.Shankar	GKVK, UAS Bangalore	080-23620795 09901989693 drylanduasb@rediffmail.com	Research, Extension & Project formulation etc.	Proposing new project, Initiating research	Agro-forestry Agriculture	Yes	Submitting research project for funding	e-mail group	<ul style="list-style-type: none"> By developing research project jointly with all AICRPDA centers spread over India.
40	Surojit Bose	Price water house coopers	09831081453 surojit.bose@in.pwc.com	Consulting in climate change and sustainability	Retain market leadership in CDM and become a thought leader	All sectors	Yes	All	e-mail e-news letter	<ul style="list-style-type: none"> Work with private sector. Ensure transparency and objectivity.
41	Praveen Kumar	CAZRI Jodhpur	0291-2786766 0291-2744943 09460249988	Research	Initiating new project on residue quality improvement	Agriculture	Yes Informally	Policy research	e-news letter	<ul style="list-style-type: none"> Attempt to accumulate Carbon at lower depths because that will have longer residence time.
42	Shamsudheen.M	CAZRI, Bhuj	09427976663 mshamsu2001@yahoo.com	Research	Initiating research	Agro forestry/ Horticulture	Yes	Policy research	e-news letter	<ul style="list-style-type: none"> Sound research back up, Awareness
43	Dr.Smita Sirohi	NCAP, New Delhi	9416003364 9818311890 smita@ncap.res.in smitasirohi@yahoo.com	Research and Consultancy	Continuing the research work in CDM in dairy sector	Livestock and sustainable development issues in CDM	Yes	Developing PDD Policy research	e-mail	<ul style="list-style-type: none"> Intensify efforts on capacity building. Identify specific technologies that can be up scaled into CDM projects.
44	Dr.K.Suresh	NRCOP, Pedavegi, West Godavari	08812-253550 9440205509 sureshkanchera@rediffmail.com	Research	Propose a new project	Afforestation with oil palm plantations	Yes	Submitting research project for funding	e-mail e-news letter	<ul style="list-style-type: none"> Afforestation with plantation crops. Bio energy (biofuel) from palm oil, jatropa.

45	T.R.Shanmukha	Veda Macs Limited, Hyderabad	shanmukhatr@yahoo.co.in	Project Development and Research	Continue with the existing projects and propose projects on methodology development	Forestry sector	Yes	Submitting research project on methodology	e-mail	<ul style="list-style-type: none"> • Come up with country specific methodology which will help in effective PDD development.
46	Gautam Goswami	TIFAC, DST, New Delhi	goswamig.tifac.org.in	Project support & methodology development	Support for PDD	Agriculture, horticulture & livestock	Either way	Funding project for developing methodology, PDD	E-mail group	<ul style="list-style-type: none"> • Developing a concrete methodology first. • Identifying specific areas within agriculture and zeroing in on most potential one for developing PDD through brainstorming.

