TERMS OF REFERENCE

ASSESSMENT OF "Climate Change Knowledge Network in Indian Agriculture (CCKN-IA)"

1. Background

India has vast expertise and experiences on climate change adaptation (CCA) measures and institutions garnered through various experiments and pilots by ICAR, State Agriculture Universities, KVKs, NGOs and private sector partners. There is immense scope making the knowledge thus generated by existing Agriculture Knowledge and Information Networks (AKINs) available and accessible to all stakeholders (public, private, communities and civil society). Access to knowledge will enable planners to develop appropriate strategies, advisors to develop locally relevant advisories and farmers to access and adopt timely, authentic and localised knowledge in order to cope better with and adapt to the effects of climate change (both over a short term and a long-term period).

Ministry of Agriculture, Government of India and GIZ have entered into an mutual agreement to develop processes, tools and Information communications enabling environment for a coordinated exchange of up to-date and relevant information related to climate change adaptation strategies of agricultural practices. The 'Climate Change Knowledge Network for Indian Agriculture (CCKN-IA)' project takes up this cause, provide tools and best practices for an efficient knowledge management for these players and connects, complements and optimizes existing networks in order to improve the exchange of agricultural relevant information. This is backed up by strengthening the stakeholders' capacities.

CCKN-IA project is being implemented in three states namely Jharkhand, Maharashtra and Odisha on a pilot basis in 6 districts (two districts in each state) and 12 blocks (2 blocks per selected district) to validate the measures/technologies developed under the project.

The CCKN-IA project aligns with the objectives, structure, strategies, interventions and outcomes of the National Mission for Sustainable Agriculture (NMSA), formulated by the Ministry of Agriculture (MoA), Government of India for enhancing agricultural productivity especially in rain-fed areas. Deriving its mandate from the National Action Plan on Climate Change (NAPCC), NMSA will focus on integrated farming, water use efficiency, soil health management and synergizing resource conservation for dry-land agriculture. NMSA is expected to transform Indian agriculture into more climate resilient production systems through suitable adaptation and mitigation measures in domains of crops, animal husbandry and fisheries.

CCKN-IA facilitates through technical as well as institutional mechanisms to link different 'Agricultural Knowledge and Information Networks (AKINs)' available in the country and strengthen the knowledge hub and networks. Efforts are being made to integrate relevant climate change adaptation practices from authentic technical resource agency websites and knowledge portals/National e-Governance Plan-Agriculture (NeGP-A) under CCKN-IA.

The ICT platform and institutional mechanisms innovated by CCKN-IA, will support the content, knowledge and climate information for all the thematic components under the NMSA.

The project intends to bring changes / improve at the following levels:

1. *Sharing and generating quality advisories on CCA through networks:*
   CCKN-IA is a new generation ICT based initiative that attempts to use ICT tools to establish networks of experts, institutions, extension systems and manager around CCA in agriculture.

The scope is effective sharing of knowledge around CCA and access to quality knowledge inputs and advisories to farmers and other stakeholders. The quality norms established for sharing and dissemination of climate change adaptation advisories are:

i. Timeliness
ii. Locally Contextual / Relevant
iii. Technically valid
iv. Understandable

The ICT interface set up by CCKN-IA intends to ensure that all the stakeholders in the network (involved in knowledge generation, sharing and dissemination) have access to the quality advisories and knowledge on climate change adaptation in agriculture.

2. *The local advisors have timely access to information and develop locally contextual and quality advisories using ICT tools*:
   The project has established local level networks of experts from regional IMD centres, KVKs, Universities and others who generate and disseminate quality advisories. The local network members access weekly updates on weather advisories (from IMD), and hence create localized quality advisories and disseminate to farmers and extension agents. These local advisors also are linked through peer-networks to respond to urgent needs of farmers (through extension agents). The advisors are supposed to develop advisories within 24hrs of receipt of weather forecasts / advisories and within 48hrs to queries raised by the farmers.

3. *Extension agents effectively perform as a knowledge bridge between the experts and farmers.* Extension cadre provides the final mile connect with the farmers. They not only effectively disseminate the advisories to farmers through multiple modes but also connect the needs and queries from farmers with subject experts, for near real time redressals.

4. *The entire process of content creation and dissemination meets the requirements of farmers and they see a value of the advisories*. This is expected to lead to adoption of advisories by farmers.
   The farmers see the benefit of the advisories and adopt them only if the advisories are of quality i.e. timely, relevant to their local needs, valid and understandable.

The project commission and partner (MoA) has defined projects Results Matrix for monitoring and assessment of project results. Besides the results matrix, the project has also develop a *results model* establishing the intervention and results chains to determine effective contribution and progress of the project.

The Project Results Matrix:

Summary	Success indicators	Sources of verification	Assumptions / Risks
Programme objective Public and private NRM interventions improve the natural resource base, minimise the risks of climate change and enhance productivity and incomes in rural areas.			

Summary	Success indicators	Sources of verification	Assumptions / Risks
Module objective (Outcome) Relevant actors in agriculture at national, state and district level increasingly use information and advisory content provided by the climate change knowledge network.	**Indicator 1:** Number of requests from new stakeholders for membership in the network. **Baseline:** 0 **Target value:** 23 in 2015, 25% for every subsequent year. **Indicator 2:** X% of stakeholders at national, state and district level confirm that the information is up to date, comprehensive, understandable and relevant. **Baseline:** 0 **Target value:** 80% **Indicator 3:** Based on information of the network, the Department for Rain fed Agriculture of the Indian Ministry of Agriculture has developed specific support services for adaptation to climate change in the three states. **Baseline:** 0 **Target value:** 1 **Indicator 4:** X of Y channels to communicate the information on adaptation are specifically targeted at women. **Baseline:** 0 **Target value:** 25%	List of members, membership request protocols Baseline survey 2014, random sampling survey Reports of the department Reports of agricultural extension workers / NGOs	**Assumptions**: The Indian Government acts as a catalyst in the dialogue with other donors for the implementation of climate change related initiatives. The Ministry of Agriculture actively supports cooperation with other departments. The Ministry of Agriculture remains willing to cooperate at par (same rights and obligations) with civil society and private actors in the development and use of the climate knowledge network.
Output A Public, non-government and private partner orgainisations of the network provide climate change relevant services.	**Indicator A.1:** The partner organizations in the 3 states provide services through the network (e.g. information, advice / recommendations) for adaptation to climate change. **Baseline:** none **Target value:** Information from partners is available in 3 states.	Monitoring report Random sampling survey	**Assumptions**: Close cooperation of various network partners despite the differences of interests. Network participants do not withhold politically sensitive information (e.g. market price information of the most important staple foods) in the network.

Summary	Success indicators	Sources of verification	Assumptions / Risks
	Indicator A.2: 60% of farmers in the pilot villages who are connected to the network, confirm that the information helped them improve their farming systems. **Baseline:** 0 **Target value:** 60%		**Assumptions**: The implementation of National Missions on climate change adaptation remains priority of the Ministry of Agriculture at national and state level. Contributions of private network participants and NGOs flow into the concepts and guidelines. The governments of the three states continue assigning a high political priority to the climate change knowledge network
Output B Lessons, concepts and guidelines of the network become part of national decision making processes / strategies of MoA (policy advice).	**Indicator B.1:** Evaluation of the experience in the development and operation of the network is presented and discussed with the Ministry of Agriculture in 2 events. **Baseline:** 0 **Target value:** 2 events **Indicator B.2:** In three Indian states a concept, including guidelines for introduction of the climate change knowledge network, is available. **Baseline:** 0 **Target value:** 3 states	Event reports Concept paper	

2. Current status of the project:

CCKN-IA is currently operational, on a pilot basis, in three Indian states. It is being guided by steering committees at the national, state, and local level, and technically supported by state and national level advisory groups of network partners.

The project approaches:

- CCKN-IA has developed an open source platform called Network for Information on Climate (Ex) Change (NICE), for effective knowledge exchange among the stakeholders and a two-way, real-time communication between farmers and knowledge providers. NICE facilitates institutions like universities, Krishi Vigyan Kendras (KVKs), Indian Meteorological Department (IMD), private sector (e.g. iPPP with Reuters Market Light) and others are engaged in developing and disseminating localised quality knowledge on climate change adaptation.
- The project uses digital technologies to improve networking and to enable cooperation across all hierarchical levels, departments and communities of practice.
- The project works with and builds capacities of public and private sector partners as well as establishes innovative institutional systems to support and continue such knowledge networks. Organisations like State Agricultural Management and Extension Training Institutes (SAMETIs) are being supported as the state level Consortium Facilitating Agency (CFA) for coordinating and managing the network of related stakeholders at state levels. CCKN-IA is also helping the National Institute of Agricultural Extension Management (MANAGE) to become a facilitating agency for knowledge networks at the national level, support capacity building and replicate ICT-enabled knowledge advisories in other parts of the country.

- CCKN-IA builds on the existing resources and institutions in the public and private space through strategic leverages and convergence.

The **results** achieved so far are:

- NICE as knowledge management platform, has over 350 registered users. More than 25,000 farmers in the three project states are linked to NICE, receiving quality advisories.
- Networks of knowledge providers and users provide highly localized and vetted advisories on CCA to farmers. Advisories are disseminated through extension systems as well as private players by using multiple modes of communication such as SMS, videos, illustrations, in person interactions etc.
- Peer networks of experts result in a three-tiered quality assurance and validation of localized advisories. Similarly, networks of extension agents and farmers too help in collating real time feedback and answering queries relating to climate change challenges and adaptation needs.
- Extension agencies are trained to deliver advisories to the farmers and use feedback mechanisms. They are equipped with NICE tablet applications. Their capacities are also built as local advisors on pest and disease management.
- Social media are used as near real-time platform for peer-learning and resolution of issues
- Effective institutional mechanisms supported by operational guidelines; is helping in establishing knowledge networks as well as effective monitoring and implementation of the project interventions

The **developmental goal** of the project is:

- ICT-enabled knowledge networks will be mainstreamed under NMSA, Ministry of Agriculture, as well as in any private-sector led NRM intervention. The project has the potential to positively benefit the lives of nearly 240 million Indian farmers by enabling their access to timely and high-quality advisories.

Please visit the project web site – www.cckn-ia.org for further details on the project.

3. Details about the assignment: Assessment of project results:

3.1 Brief of the assignment:

The assignment focuses on qualitative and quantitative assessment of the project indicators (as provided under the Results Matrix), through application of various suitable tools and research methodologies.

The Objectives of the assignment are:

1. Develop suitable quantitative and qualitative methodologies for the assessment using primary data, qualitative data as well as secondary data (like reports, records, minutes etc.)
2. Provide good quality assessment of project indicators both using qualitative as well as quantitative methodologies

3.2 Proposed design for assessment:

The project is working on a pilot basis in 2 select districts, 4 select blocks and about 10-20 villages in each project districts. The project states were identified based on the following considerations:

1. Jharkhand: Two districts in Jharkhand namely East Singbhum and Ranchi have been selected. These were identified as locations representing tribal population and rain-fed agriculture
2. Maharashtra: Two districts were project is operational are Pune (representative of comparatively well off farmers) and Ahmednagar (difficult, drought prone and rain-fed)
3. Odisha: Ganjam (representing coastal risk scenario) and Dhenkanal (representing rain-fed and drought prone agriculture)

Within each of these districts, the panchayats were categorised as 'well developed', 'medium developed and 'less developed'. Within each of these categories, about 4 representative Gram Panchayats were identified and further in each cluster of these panchayats, representative villages were taken under the project (please refer to Annexure A for further details). In Maharashtra, one village is equivalent to a panchayat (in terms of size and population) and hence 6 panchayats have been identified representing each of the cluster (category). In total project is operational in 41 villages in Jharkhand, 32 in Odisha and 27 in Maharashtra.

Kharif or the summer-monsoon season is the critical cropping season in India, especially in the rain-fed areas. The assessment process will hence focus on assessment during the kharif, 2016. The assessment is proposed as two phase approach:

1. Pilot testing of tools and rapid assessment: Proposed in May-June, 2016
2. Intensive assessment: September-October, 2016 (end of kharif)

Assessment at farmer levels:

Indicator A.2: 60% of farmers in the pilot villages who are connected to the network, confirm that the information helped them improve their farming systems.

There are about 4000 direct farmer clients and overall about 25000 farmers. About 25,000 farmers are the extensive group of farmers that receive localized advisories through NICE directly on their mobiles – as SMS. The intensive group of about 4000 farmers, get more intensive hand holding and support through extension cadres. Extensive group of farmers are primarily in Maharashtra where the project in partnership with RML provides SMS based advisories as value added service to market information. RML regularly conducts 'health checks' of extensive farmer groups to assess the value and use of advisories.

It is proposed that representative sample of farmers to be identified from Intensive group:

- Categories of panchayats and villages i.e. Well developed, medium developed and less developed
- Districts
- Climate risks and vulnerabilities

Assessment at extension agent levels:

Each village or cluster of villages is catered by an extension agent (Agriculture Assistants or Krishak Mitras) who are responsible for:

- Effective dissemination of weather based agriculture advisories. They disseminate using multiple models – through notice boards in the villages, group based discussions and through tablets
- Capturing feedback: the extension agents capture the feedback from the farmers and post it on the NICE platform. This enables the advisory developers to iterate the advisories. This also helps in terms of providing real time farming scenarios to the experts for better localization of advisories
- Posting queries: The extension agents also play a critical role in posting queries from the farmers on NICE that is responded to by the respective subject experts

It is proposed that representative sample of extension agents should be taken as per sampling design as used for identifying sample farmers. This is to ensure relation between the responses of the extension agents to the primary assessment at farmer levels.

Assessment at content development and exchange process: (Ref: Indicator 1 and 2 and Indicator A.1): This will include semi-structured personal interviews and discussions.

Assessment at managers and policy makers: (Ref: Indicator 3, Indicator A.1, B.1 and B.2): This will include semi-structured personal interviews and discussions.

3.3 Expected Outputs:

1. Hand-over of original data and their compilation
2. Detailed final soft and print copy of Assessment Report
3. 3 Consultative meetings one each in project state and one at Ministry of Agriculture; to share the results
4. Documented Case Studies

3.4. Eligibility

3.4.1 Organization / Entity. The bidder should have proven experience:

- In the agriculture sector and preferably on climate change issues in agriculture
- Conducting impact assessments in the field of agriculture
- Using qualitative and quantitative methods
- Working with international organizations
- Working knowledge of Jharkhand, Maharashtra and Odisha
- Provision of experienced staff - more than 10 years as team leader and at least 5 years of experience of other relevant team members

The bidder should be a registered entity with working for at least 5 years in India and an average turn-over of INR 1 Crore in last 3 consecutive years.

3.4.2 Experts required

a. Team leader:
    - Master or PhD and substantial experience in Agriculture / Natural resources management and related subjects
    - Specific qualification in use of quantitative and qualitative assessment methodologies
    - Proven ability to manage a diverse team
    - Experience / knowledge of agriculture sector in India and specifically Jharkhand, Maharashtra and Odisha

b. Technical Experts
    - Master or PhD and substantial experience in Agriculture / Natural resources management and related subjects
    - Specific qualification in use of quantitative and qualitative assessment methodologies
    - Experience / knowledge of agriculture sector in India and specifically Jharkhand, Maharashtra and Odisha

3.5. Places of Assignment

The assignment will be focusing on the CCKN-IA project sites i.e. 3 states (Jharkhand, Maharashtra and Odisha) and selected 2 districts, 6 blocks and corresponding villages in each state. It is expected that the agency would conduct the study through a robust sample of project villages.

3.6 Timeline

The assignment is expected to be conducted in two rounds:

- During May-mid June, 2016 i.e. end of Rabi season (for piloting of tools and rapid assessment)
- August- September i.e. during Kharif season (intensive assessment)

The interested firm is requested to:

1. Share a detailed methodology for assessment of the project indicators
2. Human resources (with brief resume of Lead and team members)
3. And time line for completion of the assignment

ANNEXURE I

Summary of project reach:

	Jharkhand		Maharashtra		Orissa		Total
	East Singbhum	Ranchi	Pune	Ahmednagar	Ganjam	Dhenkanal	
# of villages	20	21	12	12	14	16	96
Farmers Population Intensive	904	899	26	162	680	1404	4075
Extension Agents	20	21	12	11	14	16	95