**DST/CCP/PR/05/2011 (G-1)**
**Government of India**
**Ministry of Science & Technology**
**Department of Science & Technology**

Technology Bhavan
New Mehrauli Road
New Delhi 110016
Dated 22.12.2011

(Dr Seema Mehra Parihar)

## CORRIGENDUM

**Sub:** Financial assistance for research project entitled **"Devise a Grassroots' level Geospatial System for Climate-Stress Management in Bhilangana Basin of Garhwal Himalayas" by Dr. Seema Mehra Parihar, Joint Director, Developing Countries Research Centre, University of Delhi, Delhi-110007.**

This is in continuation to the sanction order no. DST/CCP/PR/05/2011 (G) dated 21.11.2011 issued from this department. The budget heads under second paragraph of the said sanction order may be read as follows. The other terms and condition and the total amount of the sanction order will remain unchanged

The year-wise budget break-up for the sanctioned amount is as follows

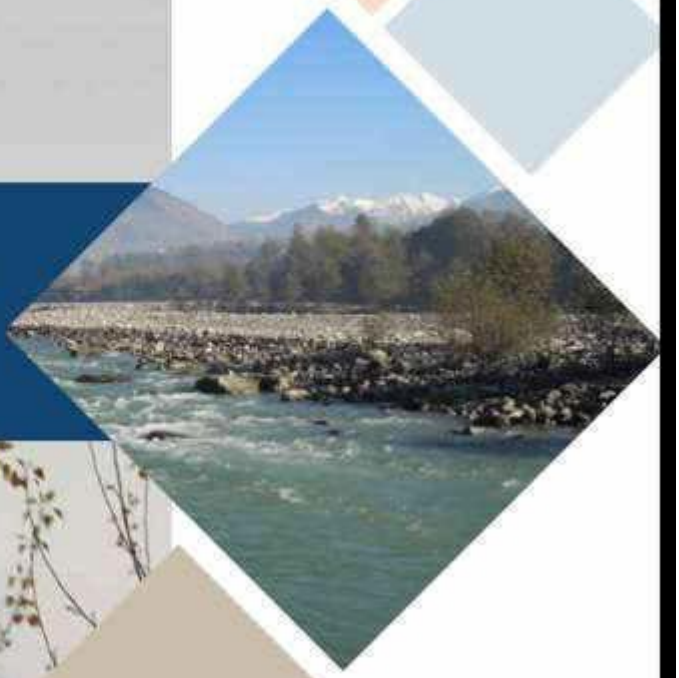
| S.L | Heads | 1st Year Lakh | 2nd year Lakh | 3rd Year Lakh | Total budget Lakh |
|---|---|---|---|---|---|
| | **C. Recurring** | | | | |
| 1. | **Salary/Wages** One Project Fellow@ 12000/- PM ( for 3 years) | 1.44 | 1.44 | 1.44 | 4.32 |
| | **Hiring services** | --- | 0.10 | --- | 0.10 |
| 2. | **Travel** | 0.75 | 0.75 | 0.70 | 2.20 |
| 3. | **Consumables** (including books & Journals+ Training programme) | 1.40 | 0.60 | 0.50 | 2.50 |
| 4. | **Other costs** | | | | |
| | Stationary & Printing | 0.25 | 0.50 | 0.50 | 1.25 |
| | Contingency | 0.30 | 0.30 | 0.30 | 0.90 |
| | **Subtotal (A)** | **4.14** | **3.69** | **3.44** | **11.27** |
| | **D. Capital** | | | | |
| 1. | Equipment | 1.95 | --- | --- | 1.95 |
| 2. | Software | 1.75 | --- | --- | 1.75 |
| | **Subtotal (B)** | **3.70** | | | **3.70** |
| | **Grand Total (A) + (B)** | **7.84** | **3.69** | **3.44** | **14.97** |

Anand Kamavisdar
Scientist "D"

Sparihar

(Dr Seema Mehra Parihar)

# NATIONAL MISSION ON STRATEGIC KNOWLEDGE FOR CLIMATE CHANGE (NMSKCC)



Department of Science & Technology
Ministry of Science & Technology
Government of India

NMSKCC NATIONAL MISSION ON STRATEGIC KNOWLEDGE FOR CLIMATE CHANGE

November 2015

# FOREWORD

Climate change is one of the most formidable threats mankind is facing. Its consequences are increasingly being felt throughout the world although the developing and the least developed countries are the most vulnerable to the adverse effects of it. It is therefore important to have climate-resilient development for which strong scientific evidence-based policy formulation is a precondition. A strong and strategic knowledge system not only helps in identifying, formulating, planning and implementing policy-driven actions but also in maintaining the necessary economic growth rate.

Department of Science and Technology (DST), Government of India (GOI) has been given the responsibility to coordinate and implement various activities under the National Mission on Strategic Knowledge for Climate Change (NMSKCC), which is one of the Missions under the National Action Plan on Climate Change (NAPCC). I am delighted that DST is bringing out this technical document compiling the salient outcomes emanated from various research programmes and projects under NMSKCC. We are happy to share it with the stakeholders and participants at the India Pavilion of the prestigious 21st Conference of Parties (COP 21) under the United Nations Framework Convention on Climate Change (UNFCCC) in Paris.

NMSKCC Mission is in the starting phase, and I am sure in future, it will develop into a pool of knowledge on which future policy and programmes will rely. The programmes presented in the booklet provide a glimpse of the various activities undertaken so far to develop strong strategic base for climate-resilient development.

I would like to thank the timely inputs from the research teams from the participating institutes who are working under NMSKCC Mission.

I wish successful deliberations at COP21 in Paris under the mandate of UNFCCC.

Prof. Ashutosh Sharma
Secretary
Department of Science and Technology



## Research Programmes on Human and Institutional Capacity Building

This programme consists of various research and development projects which have been granted to different research institutes of international repute in India on the themes related to climate change and ocean, climate change and agriculture along with other related areas. Some of the projects are:

- Climate Change and Ocean
  - » Estimating sea-level rise trends along the Indian coast using past tide-gauge and satellite altimeter data
  - » Future projection of storm surges and inundation along the east coast of India using numerical simulations
  - » Laboratory experiments to study ocean acidification using foraminifera

- Climate Change and Agriculture
  - » Strategic knowledge for climate change on agriculture and forest ecosystem in Indo-Gangetic Plains (IGP) of UP
  - » Adaptation of Indian agriculture to climate change
  - » Climate change impact assessment and developing adaptation strategies for rice crop using CERES-Rice model
  - » Impact of El Niño/Southern oscillation on hydrology and rice productivity in Cauvery basin: Application of soil and water assessment tool

- Other Projects:
  - » Devise a grassroots-level Geospatial System for Climate-Stress Management in Bhilangana Basin of Garhwal Himalayas
  - » Socio-economic vulnerability of Himachal Pradesh to climate change

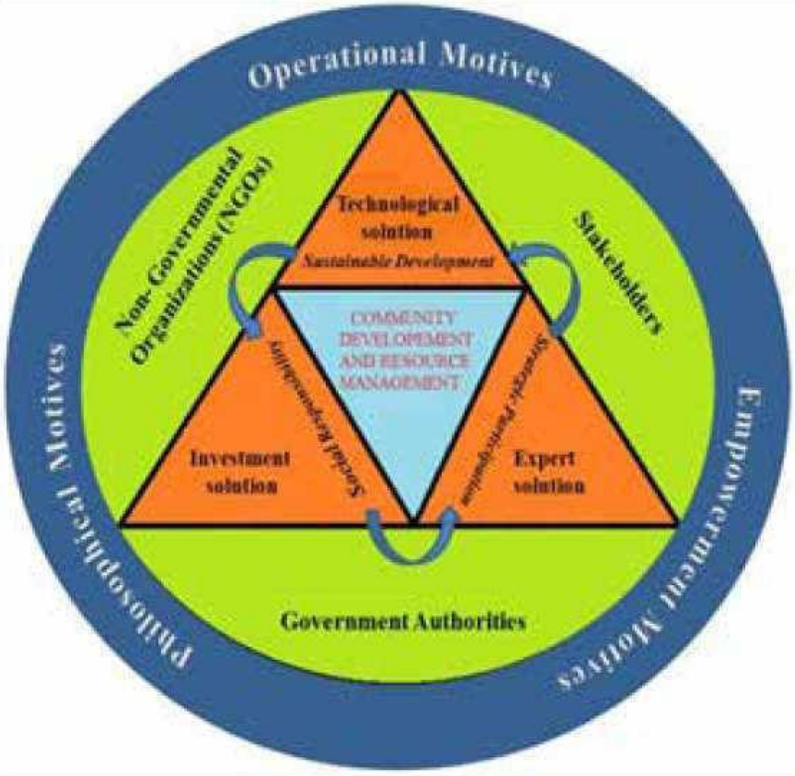



Figure 7

Devise a Grassroots-level Geospatial System for Climate-Stress Management in Bhilangana Basin of Garhwal Himalayas
Delhi University, New Delhi

(Dr Seema Mehra Parihar)

Objectives:

To devise a Grassroots-level Geospatial System for climate-Stress management in Bhilangana Basin of Garhwal Himalayas.

Salient Outcomes:

The research has offered three recommendations 'as of' for negotiating strategies by domestic climate policy makers to take forward at international forums as:

- Creation of holistic adaptability mechanism at grassroots level with multiple measures of external support (economic, government, social etc.) spearheaded by philosphic, operational and empowerment motive.
- To give more importance to indirect consequence of climate change related to livelihoods.
- Creating stand-alone global schemes focusing on high magnitude borderless climate event in the Himalayas, though with low probability. Ethical concerns should always be part of moral binding while formulating the policy framework.

## List of major R&D Projects sanctioned by Climate Change Programme, DST during 2011-12

| | |
|---|---|
| **1** | **DR. A. S. UNNIKRISHNAN**, NIO, Long Term Changes in Extreme Sea Level and Mean Sea Level Along the Indian Coast |
| **2** | **DR. NANDITA SINGH**, NBRI, Strategic Knowledge for Climate Change on Agriculture and Forest Ecosystem in Indo-Gangetic Plains (IGP) of UP |
| **3** | **DR. HIMANSHU PATHAK**, IARI, Adaptation of Indian Agriculture to Climate Change |
| **4** | **DR. SEEMA MEHRA PARIHAR**, DU, Devise a Grassroots' level Geospatial Climate Capacity Building Information System (GGCCBIS) for Climate-Stress resource management in Bhilangana Basins |
| **5** | **DR. V. GEETHALAKSHMI**, TNAU, Climate Change : Impacts, Adaptation and Mitigation Strategies for Agriculture in Tamil Nadu |
| **6** | **PROF S. K. DASH**, IIT, Delhi, Modeling Regional Climate Change : Addressing Scientific uncertainties and capacity building needs |
| **7** | **DR. RATAN KAR**, BSIP, Analysis of Climatic Changes During the Quaternary From Glacial Sites in India Based on Multi-Proxy Data |
| **8** | **DR. RAJIV NIGAM**, NIO, Laboratory Culture Experiments to Understand Response of Foraminifera to Ocean Acidification |
| **9** | **DR. PRAMOD K. SINGH**, IRMA, Creation of a Centre of Excellence on Climate Change Studies and Collaborative Action Research on Promoting Climate Change Adaptive Behaviour for Sustainable Livelihoods |
| **10** | **PROF DR. JYOTI PARIKH**, IRADe, Socio Economic Vulnerability of Himachal Pradesh to Climate Change |
| **11** | **DR SUMIT DWIVEDI**, University of Allahabad, Study of Extreme Rainfall Events over India in the Context of Climate Change |
| **12** | **PROF. A.D. RAO**, IIT, Delhi, Local Scale Assessment of Tropical Cyclone Induced Coastal Storm Surge Inundation over the Coastal Zones of India a probabilistic Climate Risk Assessment Scenario |