



# NBSS&LUP NEWS



ICAR-National Bureau of Soil Survey and Land Use Planning

Amravati Road, Nagpur – 440033

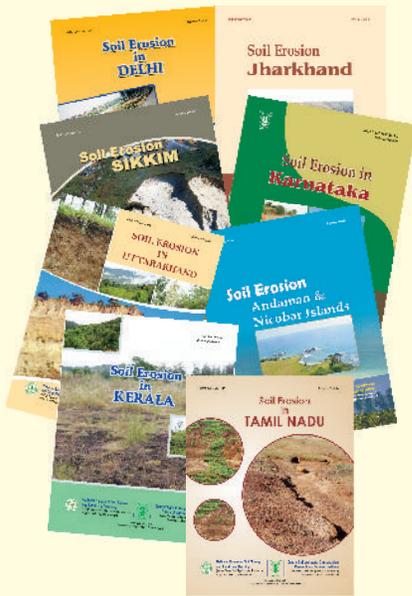
Vol. 1, No. 1

Special Issue

January-December 2014

*Pedology is the heart, soul and artistry of Soil Science – Arnold, 1992*

## Recent Publications



## Sectorial View

Land use planning finds its origin in the increasing scarcity of land and is associated with growing concern for protection of environment and sustainable use of space. Issues related to land use and its planning are becoming increasingly complex and land resource planners/managers/ officials often lack the right information at hand which limits their capacity to suggest right land use options or for that matter take appropriate land management decisions. Scientifically guided optimal utilization of land for both agricultural and non-agricultural purposes is of utmost importance. It enables meet various competing demands of the land on one hand and enhances its production potential and minimizes its degradation on the other. Land use planning facilitates better land care and management which, in turn, go as a long way in ensuring sustainable agricultural development.

In order to fulfil these aspirations, the country, in its pursuit of becoming global leaders in land use planning R&D activities, has to set realistic (achievable) goals and adopt relevant strategies to attain them.

The most important goal would be to prepare blue prints for efficient land use planning for varied purposes and at different levels based upon robust and comprehensive methodologies involving latest geospatial technologies. Implementing such land uses and development framework will preserve and protect natural resources, encourage and support energy efficient land use, reduce greenhouse gas emission (e.g. low carbon land use) and facilitate adaptation to minimize the harmful effects of climate change. Undertaking measures like carrying capacity-based planning, land use intensification in space and time through multi-functional agriculture/multi-tasking land use planning will be of immense importance towards achieving the goal of sustainable agriculture. The concept of multi-functional agriculture/multi-tasking land use planning essentially encompasses one or several function(s) in addition to the primary role of producing food and fibre. An ideal land use system for such a programme would be targeted for increasing the agricultural production as well as environmental protection for improving the productivity of water in command area/watershed or for ensuring livelihood, generating employment and last but not the least for ensuring food security. However, in a diverse country like India the land use systems for multi-functional agriculture shall have to be best suited to local agro-ecological condition. Use of emerging concepts such as land use synergy and integrated landscapes would be yet another strategy to provide land use planning solutions. An integrated landscape approach brings together diverse and competing groups to share natural resources and takes into account the ecological, socio-cultural and economic values of the landscape in planning and decision making.

Another important goal would be to suggest land use policy for various situations in the form of standards and protocols developed to group the lands into different categories such as prime farm lands, prevent unscientific use of fertile lands for non-agricultural purposes, identify lands suitable for non-agricultural uses, equip the policy makers with best possible estimates of greenhouse gas emission and carbon sequestration, etc. that would need to be up scaled based upon scale dependent soil survey information.

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AMRAVATI ROAD, NAGPUR-440 033

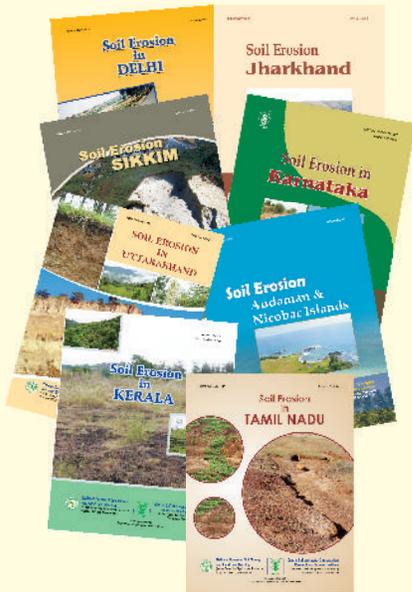
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# Research Highlights

## LAND RESOURCE INVENTORY ON LARGE SCALE (1:10000 SCALE) AND DEVELOPMENT OF NATIONAL PORTAL ON SOILS—THE PROJECT OF PARAMOUNT IMPORTANCE TO AGRICULTURAL DEVELOPMENT OF THE COUNTRY

Lack of site-specific soil (land) resources data, particularly on soils, and of situation-specific recommendations have been the causes of failure for most of the agricultural development schemes that operated in the country in the past. The Land Resource Inventory (LRI) programme plans to fill the vital gap by generating data on site-specific soil and land resources. It involves systematic survey of soils (cultivable land) on 1:10000 scale and collection of other collateral data needed for scientific land use planning in the GIS environment. The project is being executed by ICAR – National Bureau of Soil Survey and Land Use Planning (NBSS&LUP) in a consortia mode by involving State Governments / State Departments of Agriculture, State Agricultural Universities, National Remote Sensing Centre, State Remote Sensing Applications Centres and Soil and Land Use Survey of India. The NBSS&LUP, the nodal agency, has responsibility to provide required scientific/technical back-up and facilitate establishment of the National Portal on soil and other land resources of the country for effective dissemination of information. In the wake of several initiatives announced by the government, use of geospatial technologies is becoming undisputedly integral across Natural Resource Management institutions. The present programme will also use the latest geospatial technologies thereby making the project time efficient and cost effective and at the same time ensuring accuracy of the methodology.

The nationwide survey will categorize the agricultural and non-agricultural areas in terms of their strengths, limitations and opportunities for appropriate use and threats from misuse/abuse. This will help in developing perspective land use plans and monitoring their impact at macro (district/state) and micro levels (village level). Special Agricultural Zones (present and potential) will be delineated for giving focused support and services for major agricultural and horticultural production systems across the country and simultaneously delineating non-arable areas for other land uses. The importance of such land use planning is further enhanced if it is communicated/disseminated through well designed Geoportals.

The conceptual model for delineating landform and soil on 1:10000 scale is shown in fig. 2. Specially designed android-based smart mobile phone is being utilised to capture and transmit the real time dataset to end users. (Fig. 3) and the ultimate product (soil map) is shown as an illustration in Fig. 4.

**Work Plan**  
In the first phase during 2014-2018, sixty blocks (3.3 million hectare) each representing one agro-ecological sub-region of the country will be covered (Fig. 1).

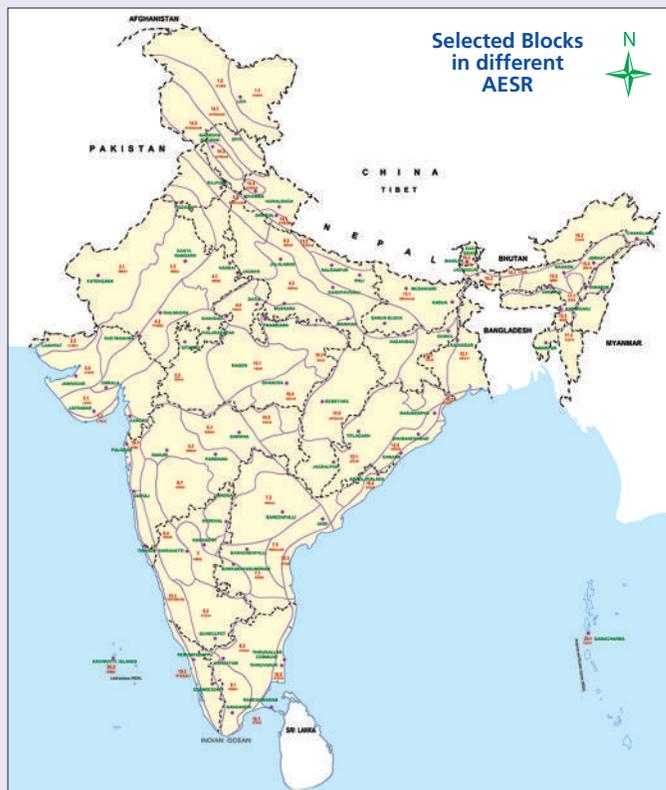


Fig. 1 : Selected blocks in different AER's of the country

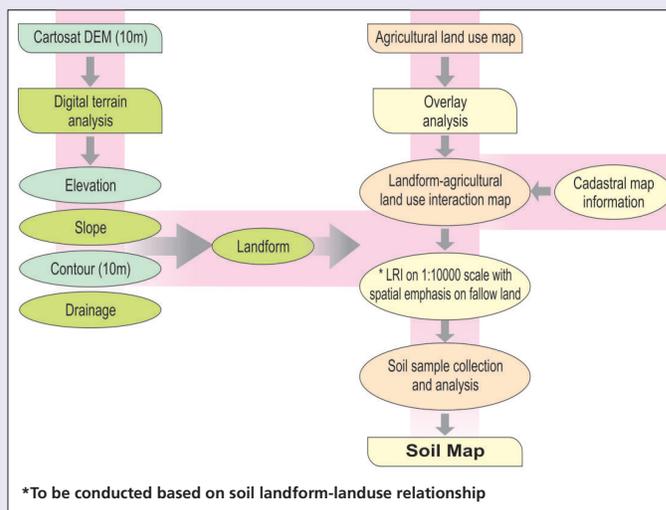


Fig. 2 : Conceptual model for delineating landform and soil on 1:10000 scale



Fig. 3 : Android-based portable digital assistant for soil survey data collection and transfer

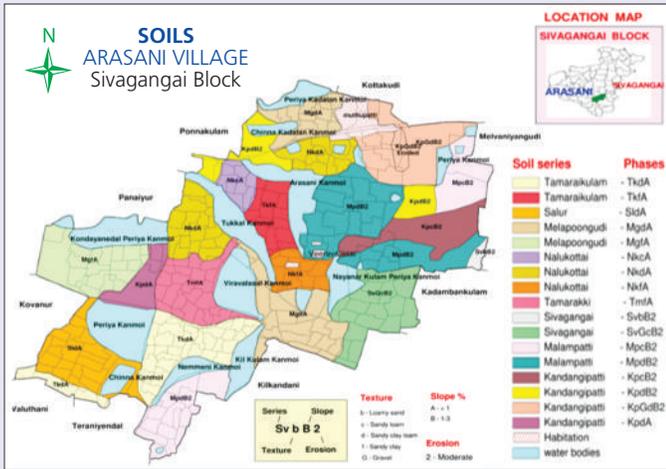


Fig. 4 : Soil map of Arasani Village

### DEVELOPMENT OF NATIONAL GEO-PORTAL ON SOILS

The proposed NBSS Geoportal is a web-based platform to be deployed in a simple architecture with database server and application server to manage soil resource database and metadata for map navigation advanced printing, and geographic queries (Fig. 4). Depending on the authorizations, the user is able to visualize and download the soil information, upload maps, create new maps and merge them with other maps. Besides the legacy of datasets, the land resource database developed under LRI project will be integrated in the Geoportal. The so developed web-based NBSS Geoportal (Fig. 5) will help to acquire, process, store, distribute and improve the utilization and dissemination of geospatial data through Web Map Services (WMS) and Web Future Services (WFS).

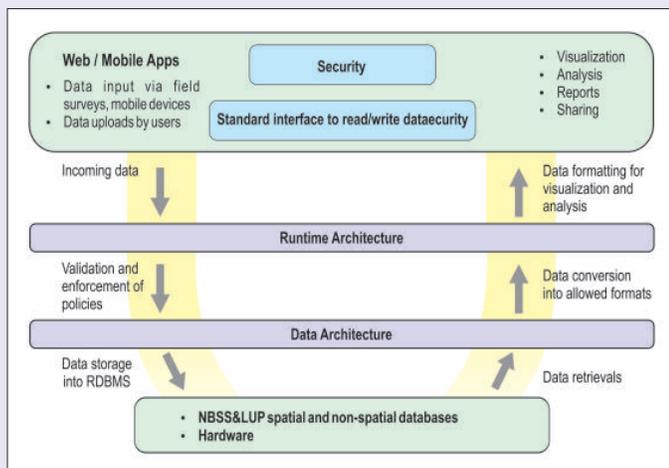


Fig. 5 : Development of National Geo-Portal on Soils.

### COLLABORATORS (as on 31 December 2014)

National Remote Sensing Centre (NRSC), Hyderabad; Govt. of Karnataka (Sujala-III project), Soil and Land Use Survey of India (SLUSI), Delhi; Govt. of Meghalaya, Bhaskaracharya Institute of Space Applications and Geoinformatics, Gandhinagar; Govt. of Telangana, and Goa.



MoU signed with NRSC, Hyderabad



MoU signed with Govt. of Meghalaya

### • DATABASE FOR GEO PORTAL

#### Soil Resource Inventory on 1:250000 scale

Standardized seamless Soil Information on 1:250000 scale has been developed in GIS. The seamless mosaic of satellite database of 370 scenes of IRS-P6 LISS-III and Digital Elevation Models (DEM) of India at 30 m and climatic database of 1600 stations have been prepared on same platform in GIS. The database also constitutes data on degraded and wasteland at 10 km grid point. 850 and 144 georeferenced data of soil profile for the black soil regions and Indo-Gangetic plains respectively are also registered as a part of database.

### • LARGE SCALE LAND RESOURCE INVENTORY FOR AGRICULTURAL LAND USE PLANNING – RECENT EXPERIENCES (TRIBAL SUB-PLAN)

#### Fragile deltaic ecosystem of the Sunderbans, West Bengal

Bali Island is located between 22°92' 533 to 22°322' 43 N latitude and 88°472' 273 to 88°472' 493 E longitude consisting of 5 villages (Birajnagar, Bijay Nagar, Bali, Amlanmethi and Mathurakhund) on 4430 hectare area in Gosaba block, 24 Parganas (South), district (Sunderbans), West Bengal. Soils of Bali village were surveyed using IRS IV P6 data and cadastral map. Occurrence of acid sulphate layers at different depths; acidity, salinity and poor drainage were the major soil constraints. Soils were classified into soil series Bali 1 and Bali 2 (Fig. 6). Acid sulphate layer occurred between the depths of 40 to 60 cm in Bali 1, whereas soils of Bali 2 exhibited the same between the depths of 80 to 100 cm. Based on the nature of constraints, 3 land management units were delineated (Fig. 7).

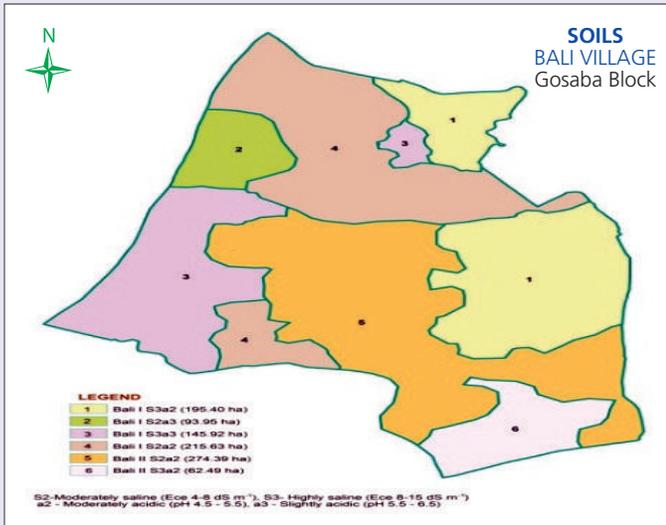


Fig. 6 : Soil map of Bali village

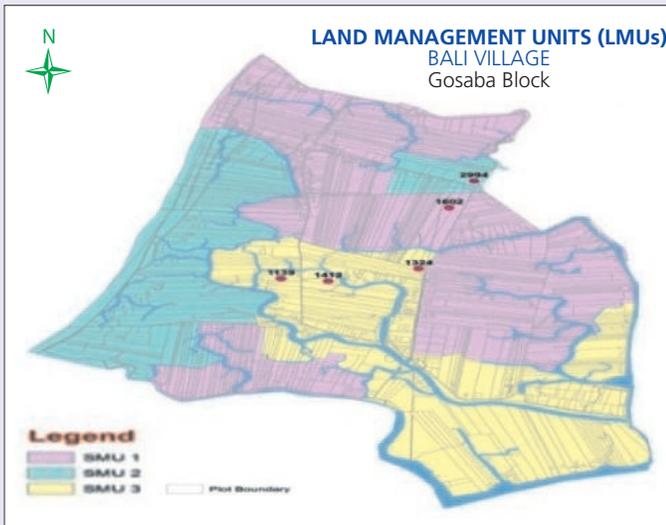


Fig. 7 : Land Management units in Bali village

**PACKAGE OF PROGRAMMES**

Farm pond technology was recommended for LMU3, shallow furrow and medium ridge for LMU2, and deep furrow with medium ridge in LMU1. After land shaping, vegetables and horticultural crops were recommended on the ridge, whereas paddy cum fish was recommended in shallow and deep furrows (Fig. 8). Farm ponds were exclusively used for fish farming.



Fig. 8 : Impact of land shaping technology in LMU1.

**IMPACT**

The farm pond technology on 0.20, 0.27 and 0.39 hectare under LMU1 generated employment to the tune of 285, 405 and 600 man days respectively and enhanced the income from Rs. 2300 to Rs. 34400; Rs.3100 to Rs. 47800 and Rs. 4500 to Rs. 68900, respectively. Soil map and land management unit maps of Bali Village guided the land managers in taking informed land use decisions.

**➤ Tribal hamlets of Mysore plateau, Karnataka**

Agro-techniques-based land use planning was tested in 7 tribal hamlets of H.D. Kote tehsil of Mysore district in 250 hectare area. The major soil constraints were undulating terrain, moderate to steep slopes, shallow soil depth, low water holding capacity, moderate to severe erosion and gravelliness. Imbalanced use of organic and inorganic fertilizers aggravated the problems of multi-nutritional deficiencies. Soils are suitable for cotton, horse gram, cowpea and finger millets with adequate soil and water conservation measures.

**PACKAGE OF PROGRAMMES**

Drinking water through mini water supply system, community irrigation project, lift irrigation production facilities, seed of horse gram and cowpea, horticultural saplings, soil conservation measures like check dam and bunding were introduced as package of programmes. Dairy farming, distribution of high range torches, skill development among women were also taken up simultaneously as off farm activities.

**IMPACT**

The package of programmes checked soil erosion, enhanced ground water recharge and increased area under irrigation. Cultivation of Bt cotton in deep soils, finger millet in shallow soils and banana plantations on homestead land optimized the crop planning. Off farm activities like establishing food processing unit in the village increased the employment for landless. The overall income of each family of the adopted village increased to the tune of Rs. 2000-3000 per month as a result of which the migration of farm families to the nearby town was restricted.

**➤ Brahmaputra Plains, Assam**

**Location**

The Regional Centre, Jorhat carried out a project on Land Resource Management for Integrated Farm Planning in



NBSS&LUP staff interacting with farmers

Bhomoraguri Mising Gaon, Pub-Teok circle of Jorhat district, Assam to identify the needs of the tribal community and prioritize them with the ultimate objective of increasing its income and ensuring livelihood security. The village covers only 16 hectare area.

### SOILS

Soils belong to Bhogdoi series of Jorhat district occurring on very gently to nearly level flood plains of Brahmaputra River. They are deep to very deep, poorly to imperfectly drained, sandy loam to silty loam on the surface and clay loam to silty clay loam in the sub-surface. These soils are slightly acidic in reaction (pH 5.0) and medium in organic carbon (0.40-0.75%). The soils are classified as Fine loamy, mixed, hyperthermic family of Fluvaquentic Endoaquents. Two soil phases were identified (Fig. 9) that was evaluated for suitability of various crops.

### PACKAGE OF PROGRAMMES

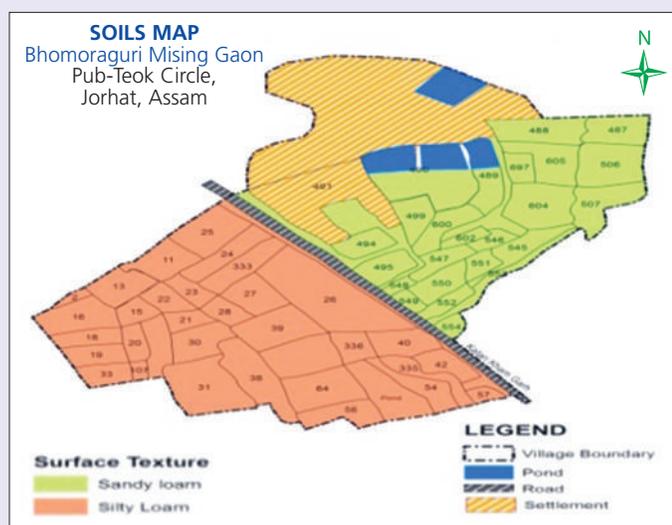


Fig. 9 : Soil Map of Bhomoraguri Mising Goan, Jorhat, Assam

Multiple cropping system has been introduced with various resource components viz., installation of shallow tube wells with pump sets, introduction of package of practices for toria, cabbage, potato and abu-rice with proper fencing, development of fishery, piggery, vermi-compost units and apiculture.



Cabbage in Rabi season

### IMPACT

The programme has increased the income and livelihood security of the 47 farm families of the Bhomoraguri Mising Gaon village.

1. As a result of scientific land use planning and use of irrigation facilities, the cropping intensity in the village has increased from 100 to 200% due to cultivation of two crops that benefitted eleven (11) farm families.
2. Eleven (11) landless tribal women of Janak Self Help Group (SHG), 12 tribal men of Krishak Bondu SHG and 4 farm families have been benefitted from fish farming.
3. 10 farm families have been benefitted through production of Vermi-compost for organic farming.
4. The village has become a model agricultural village for the adjoining tribal/non-tribal villages for sustainable agricultural production.

## LRI Draws Media Attention

National » Telangana

**THE HINDU**

Published: December 1, 2014 01:57 IST | Updated: December 1, 2014 01:57 IST

**TS to have land resources inventory in three years**

**SPECIAL CORRESPONDENT**

A land resources inventory of Telangana containing information on soil types, land use, crop production constraints, water storage capability and suitability of land for different crops will be readied in the next three years. The inventory will be prepared jointly by the Agriculture Department, National Bureau of Soil Survey & Land Use Planning (NBSSLUP), Nagpur, and Professor Jayashankar Telangana State Agricultural University. A memorandum of understanding was signed between the State Government and NBSSLUP.

Commissioner of Agriculture B. Janardhan Reddy stated that a pilot project to prepare the land inventory would be taken up in three mandals, Indarvelli (Adilabad), Tammajipet (Mahabubnagar) and Gajwel (Medak), to begin with. Mapping of land resources would help the farmers to reduce the cost of cultivation as use of fertilizer is among the highest both in Telangana along with AP.

The exercise being taken up for the first time in the country in Telangana would provide information on land use, soil fertility, water and fertilizer management and would also help in preparing plans for proper utilisation of resources, the Commissioner said at a workshop on the survey. Soil testing labs would be strengthened in the State to complement the project. He hoped that the survey would bring down the cultivation cost at least by Rs. 2,000 per acre. Underscoring the need for land inventory, Deputy Director General of natural resources management wing of the Indian Council of Agriculture Research, A.K. Sikka, said the initiative would help micro-level planning of land and soil resources, which are on the wane, for better crop productivity and profitability. Director of NBSSLUP S.K. Singh, Director of CRIDA Ch. Sreenivasa Rao, agriculture university officials D. Raji Reddy and V. Praveen Rao and others spoke.

Printable version | Dec 24, 2014 2:40:23 PM | <http://www.thehindu.com/news/national/telangana/ts-to-have-land-resources-inventory-in-three-years/article6649136.ece> ©The Hindu

The Hitavada Tuesday August 26, 2014 (Nagpur version)

**The Hitavada**

**SCIENTISTS SHOULD REACH TO FARMERS TO INCREASE PRODUCTIVITY**

Dr. S. Ayyappan, Secretary of Indian Council of Agricultural Research (ICAR) urged scientists to reach farmers community with innovative research to increase productivity. Dr. Ayyappan was addressing the 38th Foundation Day and Land Resource Inventory Programme of National Bureau of Soil Survey and Land Use Planning (NBSS&LUP) recently. He also launched mega project of National Importance to agriculture sector entitled, "Land Resource Inventory (LRI) for village level planning (1:10000 scale).

# Major Events

## MEETINGS

### Research Advisory Committee (RAC)

The second meeting of the RAC (2013-2016) of NBSS&LUP was held at its HQrs. during August 22-23, 2014 under the Chairmanship of Prof. S.K. Sanyal, Ex-Vice Chancellor, BCKV, Nadia, Mohanpur, West Bengal. Dr. D.K. Das, member Dr. N.S. Pasricha, member Dr. S.S. Magar, member, Mr. Ramesh Jichkar, farmers' representative member, Dr. S.K. Singh, Director, NBSS&LUP, Heads of Regional Centres / Divisions. Dr. P. Chandran, Member Secretary, RAC and Dr. S. Chatterji, Pr. Scientist and I/c PME cell participated in the said meeting.



A view of the Research Advisory Committee (RAC) Meeting

### INSTITUTE RESEARCH COMMITTEE (IRC)

Institute Research Committee (IRC) Meeting was held during September 4-6, 2014 at NBSS&LUP, Nagpur. Dr. S.K. Singh, Chairman, IRC and Director, Dr. J.S. Parihar, outstanding Scientist and former Director (RESA), SAC, Ahmadabad and invited expert Dr. S.K. Choudhari, ADG (SWM), ICAR and scientists of the Bureau participated in the meeting.

### FOUNDATION DAY CELEBRATIONS AND LAUNCHING OF LAND RESOURCE INVENTORY PROGRAMME

The Bureau observed its 38<sup>th</sup> Foundation Day on 22 August 2014. On this occasion, Dr. S. Ayyappan, Secretary, Department of Agricultural Research and Education (DARE), Govt. of India and Director General, ICAR and Chief Guest launched the mega programme of National importance to agriculture sector entitled, "Land Resource Inventory (LRI) for Village Level Planning (1:10000 scale) and Development of National Portal on Soils".

Dr. Ayyappan also inaugurated the Data Centre of the Bureau in the esteemed presence of Dr. (s) A.K. Sikka, Deputy Director General (NRM), ICAR and V.K. Dadhwal, Director NRSC, Hyderabad. The Data Centre would be a repository of soil /land resources information collected over more than three decades and would also accommodate future database that could be accessed by researchers, academicians, students and planners for various soil/land-based uses.



Launching of Land Resource Inventory programme



Inauguration of Data Centre

### ICAR ZONAL TOURNAMENT (CENTRAL ZONE)

The Bureau organized ICAR Zonal Tournament (Central Zone) 2014 at Nagpur during September 16-20, 2014. In all, 20 ICAR Institutes participated in the tournament.



Opening Ceremony



An athletic event in progress

### FORTHCOMING EVENTS

- 2<sup>nd</sup> Meeting of Committee for Planning and Monitoring of Agricultural Land Use Planning initiatives headed by Dr. A.K. Sikka, Deputy Director General (NRM), ICAR will be held on 28<sup>th</sup> January 2015 to review the progress made in LRI and LUP programmes.
- A Memorandum of Understanding (MoU) is to be signed between Government of Goa and ICAR, - NBSS&LUP in January 2015 for working in LRI programme on a collaborative mode.

# Personalia

## AWARD/RECOGNITION/HONOUR

### Dr. S.K. Singh

- Felicitated by the Fertilizer Association of India for his contribution in the "Soil Nutrient Mapping of West Bengal"

### Dr. Jagdish Prasad

- Delivered 24th Dr. S.P. Raychaudhuri Memorial Lecture organized by Dapoli Chapter of ISSS at Dr. BSKKV, Dapoli, Maharashtra.
- Inducted as Fellow of Indian Association of Soil and Water Conservationists, Dehradun.
- Elected as President, Indian Society of Soil Science

### Dr. S.K. Mahapatra

- Elected as President of the Section of Agriculture & Forestry Sciences of the 102<sup>nd</sup> Session of Indian Science Congress for 2014-2015 and also as a Member of the Council of Indian Science Congress Association (ISCA)

### Dr. Ramamurthy

- Inducted as Indian Society of Agronomy (ISA) Fellow - 2012

### Dr. G.P. Obi Reddy

- Conferred 'National Geospatial Award for Excellence 2013' by Indian Society of Remote Sensing for his significant contributions in *Application of Geo-spatial Technologies*. The award consists of a medal, citation and Rs. 50,000/- in cash.

## VISITS ABROAD

- Dr. Pramod Tiwary, Scientist (SS), Division of SRS, Nagpur attended a training in the area of **Geoinformatics (NRM)** under HRD component of NAIP (Component-1) at University of Tasmania (UTAS), Australia for the period from 01.03.2014 to 29.03.2014.
- Dr. S.K. Mahapatra, Pr. Scientist and Dr. (Mrs.) Jaya N. Surya, Pr. Scientist, NBSS&LUP, Regional Centre, New Delhi attended the **20<sup>th</sup> World Congress of Soil Science** at ICC, Jeju, Korea during June 8 – 13, 2014.

## ORGANIZATION OF TRAININGS

- Organized 1 month **Hands on Training** to three B.Tech. (Agricultural Engineering) students of CAU, Gangtok during 1st March to 31st March, 2014 NBSS & LUP, Regional Centre, Kolkata.
- Organized 8 day training on "**Soil Quality Assessment for the Semi-arid Tropics in Central India**" during January 16-23, 2014 sponsored by Department of Extension, Ministry of Agriculture.
- Organized a training on "**Advances in Land Resource Inventory for Agricultural Planning through Agro-Technology Transfer**" under TSP Programme was organized on 28<sup>th</sup> October 2014 at Regional Centre, Jorhat.
- Organized a training on "**Advances in Land Resource Inventory for Agricultural Planning through Agro-Technology Transfer**" under TSP Programme was organized on 28<sup>th</sup> October 2014 at Regional Centre Bangalore from 3-23 Dec. 2014.

## TRAINING RECEIVED

- Dr. P. Tiwary attended a Summer School on **Decision Support Systems in Agriculture using Quantitative Techniques** held during August 2-22, 2013 at NCAP, New Delhi.
- Dr. (S) Srinivas and S. Dharumarajan attended training on **SAS for NARS** sponsored by NAIP from 24.09.2013 to 28.04.2013 at PDADMAS, Bangalore
- Dr. Nisha Sahu attended in-house training programme on **Advance GIS applications in Spatial Database Management for Natural Resources** organized at GIS Section, NBSS&LUP, Nagpur from 2nd to 7th Sept., 2013.
- Sh. Arvind Kumar, Sr. Tech. Officer and Sabu, S. Sr. Tech. Asstt. attended one week training programme on **Advance GIS Applications in Spatial Database Management for Natural Resources** held at GIS Section, NBSS&LUP, Nagpur during September 2-7, 2013.
- Mr. Sunil Meshram attended in-house training programme on **Advance GIS applications in Spatial Database Management for Natural Resources** organized at GIS Section, NBSS&LUP, Nagpur from 2<sup>nd</sup> to 7<sup>th</sup> Sept., 2013.

## ORGANIZATION OF SEMINARS/WORKSHOPS

- Organized 1 day Seminar at Regional Centre, Kolkata on **Soil Management on Options for Integrated Farming towards Better Livelihood Security** on Jan. 28<sup>th</sup>, 2014 by ISSS Kolkata Chapter in collaboration with NBSS & LUP, Regional Centre, Kolkata, ISSLUP Kolkata Chapter & IPNI, South Asia Programme.
- Organized a National Workshop on **Library automation using KOHA software (e-Grant)** NAIP Comp-1 during 24 and 25 Jan., 2014 at HQrs., Nagpur.

## ENTRANTS

- Shri Atul V. Dankhade joined as Technician (Workshop Staff including Engineering Workshop Staff) at Cartography Section, Nagpur on 28.01.2014.
- Shri Rajneesh Kumar joined as Technical Assistant (Field Farm Technician) at Regional Centre, New Delhi on 03.02.2014.
- Dr. (Mrs.) Amrita Daripa joined as Scientist (Environmental Science) on 4.4.2014.
- Dr. (Mrs.) Kalaiselvi, B. joined as Scientist (Soil Science) on 7.4.2014.
- Miss Riu Nagdev joined as Scientist (Environmental Science) on 7.4.2014.
- Shri Pravech Chandra Moharana joined as Scientist (Soil Science) on 13.10.2014.
- Shri Prasenjit Ray joined as Scientist (Soil Science) on 13.10.2014.
- Dr. R.P. Yadav, Principal Scientist joined as Head of Regional Centre, NBSS&LUP, New Delhi on 05.11.2014.

## STAFF RETIREMENT/SUPERANNUATION

- Dr. Dipak Sarkar, Director, NBSS&LUP, Nagpur on 31.01.2014.
- Shri G.N. Sawadh, Technical Officer, NBSS&LUP, Nagpur on 31.1.2014.
- Shri M.M. Durbude, Sr. Technical Assistant, NBSS&LUP, Nagpur on 31.1.2014.
- Shri A.S. Halder, Asst. Chief Technical Officer, Kolkata on 28.02.2014.
- Shri A.N. Pawar, Technical Officer Nagpur on 31.03.2014.
- Shri R.M. Tohgaonkar, Technical Officer, Nagpur on 31.03.2014.
- Shri Devender Singh, Technical Officer, New Delhi on 31.03.2014.
- Shri J. Sampath, Assistant, Bangalore on 31.03.2014.
- Dr. C.S. Walia, Pri. Scientist, Regional Centre, New Delhi on 30.04.2014.
- Dr. G.S. Sidhu, Pri. Scientist and Head, Regional Centre, New Delhi 30.04.2014.
- Shri D.K. Nandanwar, P.S., NBSS&LUP, Nagpur on 31.05.2014.
- Dr. D.S. Singh, Pri. Scientist, Regional Centre, Kolkata on 31.05.2014.
- Shri N.M. Ramteke, Technical Officer, Nagpur on 30.06.2014.
- Dr. T. Bhattacharyya, Pri. Scientist and Head, Division of SRS on 1.12.2014.

## VISIT OF DIGNITARIES

- Dr. S. Ayyappan, Secretary, DARE and Director-General, ICAR, New Delhi
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- Dr. C. Rajkhowa, Director, NRC on Mithun, Jharnapani, Dimapur, Nagaland.

## OBITUARY

Shri Shrikishan, Technical Assistant, Regional Centre, New Delhi expired on 30.01.2014. We extend our deep condolence to his family.



Born in Varanasi, Uttar Pradesh on 12<sup>th</sup> June 1960, Dr. Singh obtained Ph.D. degree from the Rajasthan Agricultural University, Bikaner. He joined the Indian Council of Agricultural Research as Scientist at NBSS&LUP, Udaipur (1989), CAZRI, Jodhpur as Senior Scientist, CSSRI, Karnal as Principal Scientist and Regional Centre NBSS&LUP, Kolkata as its Head. He took over as Director of the same organization on 1st February 2014.

His area of research interest is Land Resource Management. He has 50 research papers to his credit in Indian and foreign journals of repute besides 40 publications in form of books/book chapters/technical bulletins/popular articles. His contributions in the field of Natural Resources Management have been recognised by a number of awards and honours viz. Shriram Award 2012 and Manthem Award 2013.

## From the Director

The NBSS and LUP is bringing a rational change in its work programmes through the use of conventional and emerging concepts, tools and techniques towards attaining the National goal of increasing food production on a sustainable basis and enhancing livelihood security. The Bureau is committed to develop analytical approach and forward looking concepts that would prove useful for the researchers, policy makers, and stakeholders to address the challenges for growth and development of the agricultural sector.

Developing soil resource inventory at different levels is the mandate of immense importance. However, keeping in view the emerging scenario, it needs to be re-oriented and made largely demand driven. Research efforts will also have to be focused on soil quality assessment and its monitoring through development of environmental indicators, precisely, indicators of climate change impact on soils like soil carbon, soil microbial diversity, mineralogical makeup, etc., and formulation of mitigation strategies to address adversaries of the changing climate.

No less important is the mandate of developing land use plans at different levels for judiciously managing and utilizing the precious soil and land resources suited to their

production potential. In implementing any land use strategy, the issues of limited soil resources and sustainability of their productivity will have to be given due importance. Since the pressure on the available soil resources shall continue to increase with time, their effective and rational use will apparently be an important strategy to increase productivity on a sustainable basis and achieve the targeted goals of food grain production. It is exactly in this connection that land use planning assumes significant importance.

The QRT (2007-2011) in its report observed that Agricultural Land Use Planning has a long way to go because of its complexity arising from, among others, its association with many other areas such as social sciences, market forces, water resources, environmental and land use policy issues. This calls for meaningful interactions with other organizations /institutes/stakeholders/local administrative bodies/ three-tier Gram Panchayat Raj organization, etc. in a consortium mode for designing better land use planning strategy for the country. The Bureau is making concerted efforts to implement these recommendations through their R & D programmes in land use planning.

**Published by** : Dr. S.K. Singh, Director, NBSS&LUP, Amravati Road, Nagpur - 440 033  
Phone : (0712) 2500386, 2500664, 2500226 Fax : (0712) 2500534  
Email : director@nbsslup.ernet.in, skcssri@gmail.com

**Editor** : Dr. S. Chatterji, Pr. Scientist and In-charge, PME Cell

**Technical Support** : Dr. S.S. Nimkhedkar, Chief Tech. Officer, Dr. A.P. Nagar, Asstt. Chief Tech. officer and Mr. P. S. Butte, Tech. Officer

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