newsletter



NATIONAL BUREAU OF SOIL SURVEY AND LAND USE PLANNING (IGAR)

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Sectorial View

Science provides the knowledge base for humans to better manage their environment and thereby ensures a favourable quality of life for present and future generations. Scientists, technologists and environmentalist have debated the limit of the Earth's capacity to support continuing population growth. Some of them observe the limits to the capacity of soils to produce the food and fibre needed for the anticipated population explosion.

Soil is delivering goods and services to humans and the environment. This includes biomass for food, fodder and renewable energy, filtering, buffering and transformation for clean ground water and clean air, besides carbon sequestration and the maintenance of a large variety of organisms guaranteeing biodiversity. Soil on the other hand may be harmful when emitting trace gases to the atmosphere, thus contributing to climate change, or by transport of soil solids to open water surfaces and to air by water and wind erosion.

During the last century, man has appropriated a large proportion of the environmental resources. This resulted in a strong increase in fluxes of nutrients and contaminants in the environment, decrease in reserves of natural resources, pollution of water, air and soils, increased urbanization and reduction of biodiversity, and increased occurrence of natural catastrophes and human health problems.

Therefore in future, two main trends will be observed: In countries with food deficiency, research in soil will mainly target fertility in its largest sense. Unfortunately, this threat is increasing in many countries in Africa, Asia and South and Central America. In contrast, in countries with sufficient food supply, soil science will increasingly target environmental and cultural issues, such as protection of the food chain against contamination, protection of ground water resources, protection of the air and of human health as well as protection of soil as a cultural and natural heritage. This is because clean food, clean water and a clean air are the basis of a healthy environment, guaranteeing a long life expectancy of people, which all depend on healthy and quality soil.

Research Highlights

Soil Resource Inventory and Soil Database

Soil Resource Survey of Khamaria Seeds Farm, Jabalpur, Madhya Pradesh for Borlaug Institute of

South Asia (BISA) – Externally Funded Project (RWC-CIMMYT)

A detailed soil survey of Khamaria seed farm (255 ha) Jabalpur, which is going to house the Borlaug Institute of South Asia (BISA), was carried out in a consultancy mode. The survey report has been submitted with various recommendations on farm planning, infrastructure development and augmentation of water resources. Dr. Dipak Sarkar, Director, NBSS&LUP along with project team visited the farm and had a discussion with Dr. R.K. Gupta, facilitator, CIMMYT, on the implementation of the recommendations proposed in the report.



Dr. Dipak Sarkar, Director, NBSS&LUP and his project team interacting with Dr. R.K. Gupta, Coordinator CIMMYT during field visit

Another farm for BISA also surveyed under the project "Soil resource mapping of Sugarcane Research Farm, Pusa, Samastipur, Bihar (Area 60 ha)" and report on recommendations for development has been submitted.



Dr. Dipak Sarkar, Director, NBSS&LUP Dr. S.K. Singh, Head, Regional Centre, Kolkata discussing in the field at BISA farm, Samastipur, Pusa, Bihar

Agro-Ecological units of Kerala

 Report on Agro-ecological units of Kerala (district-wise) for 14 districts were released on 5th March 2012 at a public function organized at Thiruvananthapuram. The function was presided by Hon'ble Minister of State for Planning, Sri. K.C. Joseph and graced by diginatries like Sri. K.M. Chandrasekharan, Vice Chairman, Kerala State Planning Board, Sri. Jayakumar, IAS, Additional Chief Secretary and Agriculture Production Commissioner, Dr. T.R. Gopalakrishnan, and Director of Research, Kerala Agricultural University. The agro-ecological delineations were developed as per the demand of Planning Commission, Govt. of Kerala. The maps and reports highlight the potentials and problems of agro-eco unit of each districts so that the same can be used as a base for planning agriculture and allied sectors in Kerala state.

Land use planning of Tirumale sub-watershed in Magadi taluk, Ramanagara district, Karnataka for integrated development.

- Prepared land resource atlas incorporating all soil based thematic maps of the study area for the Watershed Development officials of Karnataka state during field work.
- Action plan for integrated development of model watershed has been prepared in consultation with officials of district, taluk and watershed development department of Karnataka state. This has been done by considering the potentials and constraints of the resources as brought out in the detailed survey report and local requirement.
- Soil and water conservation interventions, agricultural, horticultural and livestock components are addressed in the action plan.

Dynamics of land use and its impact on soil properties in Nawanshahr and Jalandhar districts, Punjab

■ In Nawanshahr district, the content of soil organic carbon has increased and pH and CaCO₃ decreased in rice-wheat areas may be due to better biomass production under intensive agriculture. The bulk density was higher in subsurface layer as compared to surface soils may be due to mechanized farming and puddling in rice fields. Water quality is good for irrigation purpose in most of the area. Underground water table is decreasing at alarming rate (one meter per annum) in rice wheat areas which require immediate attention either to change land use or delay the transplanting time commensuration with onset of monsoon.



Study of crop moisture in the soils of Sibsagar district, Assam, during post – *kharif* period

• Profile wise determination of available water shows that moderately fine soils have av. available water of 11.63cm, fine soils 13.32 cm, moderately fine loamy soils 14.51cm and a very fine soil have 15.21 cm per 100 cm depth. The study also indicates that the per cent moisture content is also maintained at or above FC during post*kharif* period may be due to intermittent rainfall. Bulk density holds a negative correlation with O.C (-0.277*). Soil moisture tension both at 0.30 and 15 bar are negatively correlated with all the sand fractions and positively correlated with clay and O.C while silt failed to show any significant relationship. Variation of 75.62% (R^2) in 1/3 bar and 70.95% (R^2) in 15 bar with independent soil variables (B.D., O.C., sand, silt, clay and very fine sand) is explained by the regression model.

Land use planning of Chanavada watershed in Girwa tehsil, Udaipur district, Rajasthan for integrated development

The detailed soil survey of Chanavada watershed (1475 ha) was undertaken using cadastral map and Google image as a base map (1:4000 scale). Eight soil series were identified and mapped into 18 soil mapping units at phase level (Fig). Soils of narrow valley were very deep, well drained, dark brown in surface and very dark gray in sub surface, sandy loam in surface and silty loam in sub surface, moderately alkaline with very high content of organic carbon. Soils of broad valley were deep to very deep, well drained, dark brown in surface and dark yellowish brown in sub-surface, silt loam in surface and silty clay loam in sub surface with moderately to strongly alkaline and very high organic carbon. Socio-economic survey indicates that the villages are small and scattered with very low population density $(84/\text{Km}^2)$. Farmers's intensively cultivate under conventional method.



Research Papers Published

- Bhaskar, B.P., Sarkar, Dipak, Bobade, S.V., Gaikwad, M.S., Gaikwad, S.S., Nimkar, A.M., Anantwar, S.G., Patil, S.V. and Bhattacharyya, T. (2011). Land Resource evaluation for optimal land use plans in cotton growing Yavatmal district, Maharashtra. *The Ecoscan.* 1: 251-259.
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- Bhople, Balkrishna S., Pal, D.K., Ray, S.K., Bhattacharyya, T and Chandran, P. (2011). Seat of charge in clay smectites of some Vertisols of Maharashtra, *Clay Research* 30: 15-27.
- Karthikeyan, K. and Shukla, L.M. (2011). Different forms of boron and sulphur and their effect on B and S contents in mustard (*Brassica juncea L.*) and sunflower (*Helianthus annus L.*). *Agropedology*, 21: 28-34.
- N. Walke, G.P. Obi Reddy, A.K. Maji, S. Thayalan (2012). GIS-based multicriteria overlay analysis in soil-suitability evaluation for cotton (*Gossypium spp.*): A case study in the black soil region of Central India, *Computers and Geosciences*, 41 pp. 108-118.
- Reza, S.K., Baruah, U. and Sarkar, D. (2012). Mapping risk of soil phosphorus deficiency using geostatistical approach: A case study of Brahmaputra plains, Assam, India. *Indian Journal* of Soil Conservation, 40(1): 65-69.
- Sarkar, Dipak and Haldar Abhijit (2011). Extraction of boron using different extractants in soils of two agro-ecological sub-regions, West Bengal – A comparative study, *Agropedology*, 21: 40-43.
- Sarkar, Dipak and Singh, S. K. (2011). State-wise distribution of soils, land use planning under coastal ecosystem: Assess and way forward. *Journal* of the Indian Society of Coastal Agricultural Research, 29: 19-25.

• Sharma B.D., Sidhu G.S., Sarkar, D. and Kukal S.S. (2012). Soil Organic Carbon, Phosphorous and Potassium Status in Rice-Wheat Soils of Different Agro-climatic Zones in Indo-Gangetic Plains of India. *Communication in Soil Science and Plant Analysis*, **43**: 1-19.

Reports and Bulletins

- A.K. Maji, G.P. Obi Reddy and Dipak Sarkar (2012). Acid Soil of India- Their extent and spatial variability, NBSS Publ. No. 145, NBSS&LUP, Nagpur P. 138.
- Bhattacharyya, T., Ray, S. K., Sarkar Dipak, Balbudhe, D. V., Dasgupta, D., Chandran, P., Tiwari, P., Pal, D. K., Mandal, C., Nimje, A. M., Deshmukh, A. S., Deshmukh, R.R., Telpande, B.A., Lokhande, M.A., Wadai, K. N., Dongre, V.T., Thakre, S.W., Likhar, C. K., Shaikh, S. M., Agrawal, P. K., Pathak, H., Venkateswaralu, B., Rao, VUM., Nareshkumar Soora and Singh, A. K. (2011) Soil Resource Information of Different Agro-Eco Subregions of India for Crop and Soil Modelling. National Project on Climate Change (ICAR Network Project), National Bureau of Soil Survey and Land Use Planning, Nagpur, Maharashtra, p302 and 188 pages annexure.
- G.P. Obi Reddy and Dipak Sarkar (2012). Assessment of Soil Loss for Prioritization of Sub Watersheds- A Remote Sensing and GIS Approach, NBSS Publ. No. 137, NBSS&LUP, Nagpur pp. 55.

Book Chapters

- Bhattacharyya, T., D.K. Pal, Dipak Sarkar, S.P. Wani and K.L. Sahrawat 2012. Rainfed agriculture, background, area and extent. In: Bhattacharyya, T., D.K. Pal, Dipak Sarkar, S.P. Wani (Eds). Impact on Climate change in soils, Studium Press, USA. 2012 (in press).
- Bhattacharyya, T. and Tiwary, P. 2012. Predicting Changes in Soil Carbon and Crop Yield due to Climate Change, In: Bhattacharyya, T., D.K. Pal, Dipak Sarkar, S.P. Wani (Eds). Impact on Climate change in soils, Studium Press, USA. 2012 (in press).

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Training Organized

National Agricultural Innovation Project sponsored National Training on "Predicting Soil Carbon Sequestration in View of Global Warming and Climate Change" was organized during 24th Feb to 8th March 2012 at NBSS&LUP, Nagpur. Dr. A.K. Singh, DDG(NRM), ICAR was the Chief Guest of the function inaugurated the training while Dr. A.K. Joshi, General Manager, RRSC (ISRO), Nagpur was the Guest of Honor. Fifteen (15) participants from all over India representing various institutes attended the training and had hands on experience in learning Roth*C*, Century C, InfoCrop and DNDC models.



Dr. A.K. Singh, DDG (NRM), ICAR, Chief Guest, Dr. A.K. Joshi, General Manager, RRSC (ISRO), Nagpur, GOI Guest of Honor, Dr. Dipak Sarkar, Director, NBSS&LUP, Nagpur and Dr. T. Bhattacharyya, Head of Division SRS and Course Leader during the release of the Lecture Notes, Users Manual for Roth C, Century Info-Crop and DNDC Models as Training Material on the occasion of inaugural function of the Training held on 24.2.2012 at HQrs., NBSS&LUP, Nagpur

Training Programmes under TRIBAL SUB PLAN (TSP)

- A two week Training Programme on "Soil Resource Inventory for Watershed River Basin Development using Remote Sensing and GIS" was conducted from 24th January-13th February, 2012 at CTI Farm, Byrnihut, Re-Bhoi district, Meghalaya. 14 officials from Meghalaya State participated in this programme.
- A three week Training Program on "Application of Remote Sensing & GIS for Watershed characterization & Resource Planning" was organized during 20 February to 11 March 2012 at Regional Centre, Kolkata. 16 officials of Eastern region participated in this programme.



From the left Dr. A. K. Sahoo, Principal Scientist, Prof. Saroj Kumar Sanyal, Vice-Chancellor, Bidhan Chandra Viswavidyalaya, Mohanpur, Nadia, Dr. A. K. Singh, Deputy Director General (NRM), ICAR, New Delhi, Dr. Dipak Sarkar, Director, NBSS & LUP (ICAR), Nagpur and Dr. S. K. Singh, Principal Scientist and Head, Regional Centre, Kolkata during valedictory function of TSP sponsored training programme during 20.02.2012 to 11.03.2012

• A two week Training Programme on "Georeferenced Soil Resource Inventory and Mapping" was organized at Integrated Extension and Training Centre, Medziphema, Nagaland from 20.3.2012 to 4.4.2012 for the officials (20 nos.) of the Nagaland State.



Dr. Dipak Sarkar, Director, NBSS & LUP addressing to the trainee officers during a Training at, Medziphema, Nagaland on 20.03.2012

Important Meetings

Institute Research Council (IRC) Meeting

• IRC of the Bureau was held during 12-14 March 2012 at HQrs., Nagpur under the chairmanship of Dr. Dipak Sarkar, Director. The IRC discussed the progress of ongoing, externally aided and other research projects. Scientists of all the Regional Centres and Divisions presented up-to-date progress of their ongoing projects and also discussed some new projects on various themes.



Dr. Dipak Sarkar, Chairman IRC and Dr. T. Bhattacharyya, Member Secretary IRC observing the progress of projects presented by the Scientists during IRC meeting held on 12-14 March 2012 at HQrs., Nagpur

Institute Management Committee (IMC) Meeting

• IMC of the Bureau was held on 27 Feb. 2012 at Nagpur to discuss the scientific, technical and administrative matters for the period April 2011 to January 2012.



Dr. Dipak Sarkar, Director, NBSS&LUP & Chairman, IMC, addressing the Meeting on 27.2.2012 at HQrs., Nagpur

Stakeholders' Meeting

The Bureau has organized Stakeholders' Meeting on 26.03.2012 at Nagpur to understand the requirements of the stakeholders who are the real users of the land resource information developed by the institute. This has been organized in view of the different types of data and information acquired by land users and other research organizations for implementation of the programme at village, watershed, district, state and national level. The suggestion received shall be incorporated during the finalization of XIIth Plan Proposal of the Institute.



Dr. M. Velayutham, Chairman RAC addressing the stakeholders on 26.3.2012 while Dr. Dipak Sarkar, Director, NBSS&LUP, Nagpur, Dr. P.K. Shrama, Chairman, QRT and Dr. S.S. Magar, Ex-V.C., KKV, Dapoli look on

Research Advisory Committee (RAC) Meeting

Bureau's Research Advisory Committee (RAC) Meeting was held on 27.3.2012 under the Chairmanship of Dr. M. Velayutham to discuss the ongoing research programmes and the future action plan for implementing in the XII five year plan.



Dr. M. Velayutham, Chairman RAC, Dr. Dipak Sarkar, Director, NBSS&LUP, Dr. U.C. Sharma, Prof. S.C. Mukhopadhyay, Members RAC and Dr. T. Bhattacharyya, Member Secretary discussing the issues related to the future research programmes in a meeting held on 27.3.2012 at Nagpur

Quinquennial Review Team (QRT) Meeting

The first meeting of the newly constituted Quinquennial Review Team (QRT) of the Bureau for the period 2007-2011 was held on 31.3.2012 at New Delhi under the Chairmanship of Dr. A.K. Singh, DDG (NRM), ICAR to review the work done by the Bureau and suggest how best the mandated activities can be achieved in the coming years.



Dr. A.K. Singh, DDG(NRM) addressing the QRT of NBSS&LUP alongwith officials of ICAR during reviewing the work done by the Bureau for the period 2007-11 in a meeting held on 31.3.2012 at New Delhi

"Natural resources determine the course of development and constitute the challenge which may or may not be accepted by the human mind."

W. Arthur Lewis



Dr. A.K. Singh, DDG(NRM), ICAR, Dr. J.C. Dagar, ADG(AF) and Dr. Dipak Sarkar, Director NBSS&LUP, Nagpur discussing in QRT Meeting of NBSS & LUP held on 31.3.2012 at Delhi

Workshops

CMSI Workshop

17th annual convention of Clay Mineral Society of India (CMSI) and National Symposium on "Application of clay science in Agriculture, environment and industry" has been organized during 27-28 April, 2012 at Regional Center, NBSS&LUP Kolkata. The sponsorers of the symposium were CMSI, New Delhi, International Plant Nutrition Institute (IPNI), South Asia Programme, Gurgaon, Haryana and NBSS&LUP Regional Center Kolkata. Total 71 delegates were attended and 38 research papers were presented on the different themes of the symposium.



A view of inauguration of the National Symposium held on 27.4. 2012 at Rabindra Okkura Bhavan, Salt Lake, Kolkata

A Workshop on "Soil fertility Management – Project Outputs and Way forward" was organized during 24th and 25th May 2012 at Thiruvananthapuram, under the project "Soil based Plant Nutrient Management Plan for Agro-Ecosystems of Kerala". Sri K.P. Mohanan, Honorable Minister for Agriculture, Govt. of Kerala inaugurated the Workshop. Dr. Dipak Sarkar, Director, NBSS&LUP nominated by Hon'ble DG, ICAR delivered the key note address and Dr. K.M. Nair, Pr. Scientist and Principal Investigators of the project presented an overview of the work.



Dr. Dipak Sarkar, Director, NBSS&LUP addressing the Key Note address during the workshop in presence of Sri K.P.Mohanan, Honorable Minister for Agriculture, Govt. of Kerala, Sri. K. Jayakumar, IAS, Chief Secretary, Sri. Subrata Biswas, IAS, APC and Member Secretary Planning Board, P. Rajasekaran, Chief (Agriculture), Planning Board and Dr. S.K. Chakrabarti, Director, CTCRI, Trivandrum

Hindi Workshop

A Hindi Workshop on how to improve the efficiency in hindi in day to day work was organized for the administrative staff of the bureau on 10.3.2012 at HQrs., Nagpur.



A view of Hindi Workshop under the Chairmanship of Dr. Dipak Sarkar, Director, NBSS&LUP while Sh. B.D. Phansal, Chief Administrative Officer explaining the theme of the workshop held on 10.3.2012 at HQrs., Nagpur in the presence of Dr. S.K. Goyal, Principal Scientist, NEERI, Nagpur the chief guest of the function

Visit Abroad

Dr. Dipak Sarkar, Director visisted Brazil on the invitation of Govt. of Brazil to attend the Second Workshop under Indo-Brazilian Cooperation in Bioenergy as a member of Indian Delegation held during 18-21 April 2012 at FEQ-UNICAMP auditorium, Sao Paulo, Brazil. A paper entitled "Land Use Planning/ Modelling Possibilities for Sugarcane in India" was presented by Dr. Dipak Sarkar in the Workshop. Many experts from Brazil and India attended the workshop.



Dr. Dipak Sarkar, Director, NBSS&LUP presenting his paper in the Indo-Brazilian Cooperation Workshop held during 18-21 April 2012 at Sao Paulo, Brazil



A view of delegates visiting Sugarcane Farm as a part of field study conducted during the Indo-Brazilian Cooperation workshop held during 18-21 April 2012 at Sao Paulo, Brazil

Awards/Honors/Recognition

Team Award

Regional Centre, Jorhat received a shield and a certificate for better Rajbhasha Hindi Implementation during the year 2011-12 from Dr. P.G. Rao, Director, NEIST and Town Official Language Implementation Committee, Jorhat on 10.5.2012.



Dr. Utpal Baruah, Head, NBSS & LUP, RC: Jorhat receiving Award for better Rajbhasha Hindi Implementation during 2011 from Dr. P.G. Rao, Director, NEIST and Town Official Language Implementation Committee, Jorhat on 10.5.2012

Recognition

- Dr. Jagdish Prasad, Principal Scientist has been elected as Vice-President in the Council of Indian Society of Soil Science (2011-2012).
- Dr. Jagdish Prasad, Principal Scientist has been nominated as an expert on State Project Sanctioning and Monitoring Committee (SPSMC) of Chhattisgarh State by Dr. S. Ayyappan, Honourable Secretary of DARE and Director General of ICAR.
- Dr. T. Bhattacharyya has been nominated as a member of the Editorial Board of the Indian Society of Soil Science, New Delhi.

Best paper Award

 "Soil Resource Mapping for command area development – A case study in Chikkasinakere Hobli, Maddur Taluk, Mandaya District, Karnataka" by Natarajan el al. has been adjudged as the best paper during National Seminar on 'Geospatial Solutions for Resources Conservation and Management', organized by KSRSAC during 18-19 January 2012 at Bangalore.

Other Activities

The Foundation Stone Ceremony of the Training Hostel at Regional Centre, NBSS&LUP, Jorhat, Assam was held on 4.4.2012 by the hands Dr. K.M. Bujarbaruah Hon'ble Vice-Chancellor of Assam Agril. University, Jorhat. This facility shall be utilized for conducting various Training Programmes of the Bureau and other organizations of NER.



Dr. K.M. Bujarbaruah Hon'ble Vice-Chancellor of Assam Agril. University, Jorhat laying the Foundation Stone of the Training Hostel at Regional Centre, NBSS&LUP Jorhat on 4.4.2012 while Dr. Dipak Sarkar Director, NBSS&LUP, Nagpur and others from NBSS&LUP Jorhat and AAU look on.

Tribal Sub-Plan programme

- As a first step to develop an upliftment plan for tribal areas, a full Traversed of chanagundi, Alalahalii and Basavangiri tribal hamlets of H.D.Kote of Mysore was done and conducted meetings to identify the needs of the tribal for implementation of TSP under Tribal Sub-Plan programme II.
- Community were identified and Bore wells were drilled in Basavangiri hamlet with the help of geologist.
- In chanagundi and Alalahalii hamlets, mini drinking water storage tank was built for safe drinking water for the tribal people.



Dr. Dipak Sarkar, Director, NBSS&LUP dedicating Drinking Water supply to tribal community under Tribal Sub-Plan programme at chanagundi, Mysore district while Dr. L.G.K. Naidu, Head Regional Centre, Bangalore and Dr. V. Ramamurthy, Pr. Scientist look on

New Entrants

The following scientists / technical officer joined Bureau

- Dr. R.P. Sharma, Scientist (Soil Science- Pedology) joined at Regional Centre, Udaipur on 9.4.2012 after relieving from IIVR, Varanasi
- Miss. Nisha Sahu, Scientist (Soil Science- Soil Chemistry/Fertility/Microbiology) joined HQrs., Nagpur on 1.5.2012
- Mr. S. Ramachandran, Scientist (Soil Science- Soil physics/Soil and Water Conservation) joined HQrs., Nagpur on 1.5.2012
- Dr. Sudipta Chattraj, Scientist (Soil Science- Soil Chemistry/Fertility/Microbiology) joined HQrs., Nagpur on 1.5.2012
- Sh. Y. Venkatesha Reddy, Technical Officer (T-6) joined at Regional Centre, Bangalore on 30.3.2012 after relieving from CRIDA, Hyderabad

Krishi Vigyan Mela

• Regional Centre Delhi participated in "PUSA KRISHI VIGYAN MELA -20012" held at IARI, New Delhi, during March 1-3, 2012 and displayed various maps and publications and highlighting activities of the Bureau. The scientists interacted with farmers and other visitors. Leaflets highlighting the mandate, activities, and achievements of the institute (both in Hindi and English) were distributed amongst the visitors.



View of the staff of NBSS&LUP, Regional Centre, Delhi at Pusa Krishi Vigyan Mela held during 1-3 March 2012 at IARI Campus Delhi. Sh. Harish Rawat, Hon'ble Minister of State for Agriculture, GOI, and other dignitaries, farmers and students visited the stall of the Bureau and interacted with the scientists

Staff Retirement

- Shri Hemo Dutta (T-5), Regional Centre, Jothat retired on 31.01.2012 on superannuation.
- Shri.Lakshmaiah, SSS of Regional Centre, Bangalore retired on superannuation on 29.2. 2012.
- Shri K.P. Biswas, Driver T-5, Regional Centre, Kolkata retired on superannuation on 29.02.2012
- Shri V. Shankar, Driver T-3, Regional Centre, Bangalore retired on superannuation on 29.02.2012
- Sh. H.S. Huchaiah, SSS, Regional Centre, Bangalore retired in voluntarily on 16.3.2012
- Smt. B. Pimpalkhede, SSS, HQrs., Nagpur retired on superannuation on 30.3.2012
- Sh. Amarjit Singh, D/man, (T-5), Regional Centre, Delhi retired on superannuation on 30.4.2012.
- Shri S.K. Debnath, Driver, (T-II-3), Regional Centre, Kolkata retired on 31.06.2012 on superannuation.
- Shri K.M. Gaikawad, Technical Officer, (T-6), HQrs., Nagpur retired on 31.06.2012 on superannuation.
- Shri T.T. Ramteke, LDC, HQrs., Nagpur retired on 31.06.2012 on superannuation.

Visitors

Headquarters, Nagpur

- Dr. S. Ayyappan, Hon'ble Secretary DARE & Director General ICAR, New Delhi
- Dr. A.K. Singh, DDG (NRM), ICAR, New Delhi
- Dr. P.K. Sharma, Ex Director, Punjab Remote Sensing Service Centre, PAU, Ludhiana
- Dr. S.K. Sanyal, Hon'ble Vice-Chancellor, BCKVV, Mohanpur, Nadia, West Bengal
- Dr. A.N. Singh, Ex. Director, UPRSAC, Lucknow, Uttar Pradesh
- Dr. C.J. Thampi, Ex Head, Regional Centre, NBSS&LUP, Kolkata and Ex Land Use Commissioner, Govt. of Kerala.
- Prof. S.C. Mukhopadhyay, Head, Calcutta University

Regional Centre, Bangalore

- Dr J. Anand from M.S. Swaminathan research foundation Chennai.
- Dr M.S. Nagaraj, Associate Professor of UHS Bhagalkot
- 54 B.Sc (Agri) students and 4 teachers of Agricultural college, Kasargod, Kerala.
- Mr M.Moni, Deputy Director Genral, NIC, New Delhi
- Dr P.V. Veeraraju, Joint Director, Karnataka watershed development department.

Regional Centre, Delhi

- Dr. P.K. Sharma, Ex Director, Punjab Remote Sensing Application Centre, Ludhiana and Chairman, QRT, NBSS&LUP.
- Dr. M. Velayutham, Chairman, Research Advisory Council (RAC), NBSS&LUP (ICAR)

Regional Centre, Jorhat

- Dr. K.M. Bujarbaruah, Hon'ble Vice Chancellor, AAU, Jorhat
- Dr. M.C. Talukdar, Professor, Dept. of Soil Science, AAU, Jorhat
- Prof. M. Das, Ex-Head, Division of Soil Science, AAU, Jorhat

Regional Centre, Kolkata

- Dr. A.K. Singh, DDG (NRM), ICAR, New Delhi
- Prof. K.V. Raman, Former Director, NAARM (ICAR), and Chairman, ASRB, New Delhi.
- Prof. S.K. Sanyal, Hon'ble Vice-Chancellor, BCKV, Mohanpur, Nadia.
- Dr. S.K. Ghosh, Ex-President, CMSI, New Delhi and Head, SSAC, IARI, New Delhi
- Dr. H.S. Sen, Former Director, CRIJAF (ICAR), Bairrakpor, West Bengal
- Dr. Pradip Sen, Jt. Director (Research), Department of Agriculture, Govt. of West Bengal.

From Director's desk...



Dr. Dipak Sarkar DIRECTOR NBSS&LUP (ICAR), Nagpur

Acid Soils of India

A cid soils occupy approximately 3.95 billion ha and account for 30 per cent of the world's ice-free land area. The genesis of the acid soils has been attributed to several pedogenic and climatological factors. Variation in geological formations and nature of parent materials, topographical features, soil hydrological condition, rainfall and temperature are the main causative factors for formation of acid soils. These soils are extensively found in the region of high rainfall and temperature zones under different land uses such as, food crops, horticulture and plantation crops and forests, etc. The highly leached soils are, generally, poor in fertility and water holding capacity. The soils with pH value less than 5.5 is more problematic with severe deficiencies of phosphorus, calcium. magnesium and molybdenum and toxicities of aluminum and iron. The acid soils have poor supply of calcium and magnesium and more concentration of iron & aluminium. The soils, therefore, suffer due to deficiencies of phosphorous, calcium, magnesium, molybdenum and boron and toxicities of aluminium and iron. The average productivity of the soils is very low. The poor soil condition is one of the main factors of poverty and backwardness in the acid soil reaions.

In India, acid soils cover a large part of the country's landmass. Highly acidic soils in India are restricted to the Himalayan ecosystem, red and lateritic region of India, comprising both the southern and eastern plateau region and some pockets in the greater plains of the country. As per the recent estimates of NBSS&LUP, the soils with pH value <4.5 covers only 1.9 per cent of the TGA of India (about 6.24 mha) moderately acidic soils having pH in the range of 4.5 to 5.5 covers an area of 24.4 mha, which amounts for 7.4 per cent of TGA of India. Acid soils in the Himalayan region extend from Kashmir in the north-west to Arunachal Pradesh in the northeast and have developed under wide variation in the micro-climate, physiography macro and and vegetation. Acid soils are distributed in almost all the states except the western states, middle and upper Indo-Gangetic plain, where the rainfall is low. In the eastern plains, acid soils are mostly confined to Assam valley although they occur to some extent in eastern Bihar and West Bengal of the lower Gangetic plains. Acid soils of coastal plain occur mostly in Kerala, in the west coast and deltaic areas of Sunderbans in West Bengal. These soils are generally described as acid sulphate soils. Physiographically, the region having acid soils in the coasts and Sunderbans are characterized by the sandy beach, coastal sanddunes or mud flats, alluvial tracts along rivers, deltas, lagoons and estuary. These areas are subject to periodical tidal action.

Acid soils can be managed in two ways viz. either by growing a crop suitable for a particular soil pH or by ameliorating the soil through the application of soil amendment. Acid soils are have good production potential and addition of lime to these soils neutralizes soil acidity and creates favourable environment for microbial activity, nutrient release and increases crop production and productivity.

We believe "Where there is acidity (acid soils), there is poverty"

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