

**NATIONAL BUREAU OF SOIL SURVEY AND LAND USE PLANNING
AMRAVATI ROAD : NAGPUR-440 033**

RAC (2010-13)

1. Dr. M. Velayutham, Ex-Director, NBSS&LUP (ICAR), ADG (Soils), Gardenia Apartment, 275 Kilpauk Garden Road, Chennai 600 010, Tamil Nadu - **Chairman**
2. Prof. S.C. Mukhopadhyay, Ex-Head, Department of Geography, Calcutta University, 52/2A, Hazra Road, Kolkata-700 019 - **Member**
3. Dr. U.C. Sharma, Ex-National Coordinator, NATP, 222, Adarsh Enclave, Trikuda Extension 1, Jammu Pin 180 012 - **Member**
4. Dr. Dipak Sarkar, Director, NBSS&LUP, Nagpur – **Member**
5. Dr. Tapas Bhattacharyya, Principal Scientist & Head, Division of Soil Resource Studies, NBSS&LUP, Nagpur - **Member Secretary**

Action Taken Report (ATR) on RAC Recommendations (2010-13)

S.No.	Recommendations	Action Taken Report (ATR)
1.	<ul style="list-style-type: none"> • For mapping soil nutrients, NBSS&LUP should follow the norms for colour of specific nutrient elements, e.g., red for nitrogen, yellow for phosphorus; off-white for potassium; slaty for zinc, etc. • The Bureau, as discussed in detail and based on the presentation made by the Bangalore Centre, on the Pilot-project on detailed soil survey for farm level planning, may initiate a nationwide programme in a phased manner, over the next 10 years on land resource mapping for perspective state land use planning and soil-centred farm level planning with appropriate technology transfer package(s). 	<ul style="list-style-type: none"> • Being processed at SMD (NRM). • Dr. Sharma suggested for this action taken that NBSS&LUP should formulate projects in which this Institute should always act as a mission leader.
2.	Soil survey reports to be considered as scientific outputs and accordingly ASRB should give due importance to these reports in line with the scientific papers.	<p>Matter to be taken up with ASRB.</p> <p>Dr. Sharma suggested that the soil survey reports to be restricted to limited number of pages i.e. 10-15 and should finally show the recommendations indicating steps to be taken at the field level.</p> <p>Chairman commented that scientists at NBSS&LUP should organize a brain</p>

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		storming session about the FAO guidelines to complete 800 ha in 20-days in 1:10,000 scale of mapping.
3.	The importance of wetlands in and around eastern India should be realized and saved to protect the alluvial plains of the country.	<p>NBSS&LUP has got its Regional Centres at Kolkata and Jorhat, which take care of the mapping of wetlands and also suggest alternate land use plans using soil survey data.</p> <p>Dr. Baruah, Head, Regional Centre, Jorhat informed the house that watershed near Guwahati, Assam adopted by the Jorhat Centre developed LUP which will be explained to different ministers by Jorhat Centre. Dr. Mukhopadhyay, Member RAC requested Dr. Baruah to contact International Funding Agency for undertaking wetland research agenda for the Institute.</p>
4.	To analyze the problems and potentialities of soil to develop land use planning and/or alternate land use. The utility of follow-up studies on land use planning for the 52 centres NBSS&LUP earlier developed during NATP. A few of those can be taken as case studies in IVLP mode.	<p>The point is well taken and shall be taken care of for all future projects on land use planning.</p> <p>Chairman commented that out of 52 centres, NBSS&LUP can take up five best land use planning representing five eco-systems. Dr. Mukhopadhyay commented that the Institute should concentrate on doing the best to come out with the model land use planning.</p>
5.	Remote sensing should be taken in research mode and one or two districts should be tried with focussed attention. Research interpretation on spectral signature correlation with soil properties should enjoy elevated position since NBSS&LUP is going to carry out “research” on remote sensing application.	<p>NBSS&LUP, as informed under reply of recommendation no. 2 has been carrying out research on remote sensing. However, the point is well taken and the concerned Division will look into this recommendation.</p> <p>Chairman recommended that proper attention should be taken to delineate landforms to prioritize the research areas. He also commented that such exercise should be done together with Remote Sensing Application Division, GIS and Cartography Units. Members discussed about probable merging of these three together.</p>
6.	We need to monitor soil properties to be mentioned and to bring appropriate soil information in public domain for the help of the stakeholders.	<p>Properties of various soils in different agro-eco regions and bio-climatic systems have been compared at different time scales. Most of such informations are available as research articles and disseminated as portable disk format (pdf) to the users viz. researchers, students and planners.</p> <p>Chairman requested the members and the</p>

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		<p>scientists to read Dr. S.V. Govindarajan memorial lecture which the chairman delivered during the National seminar of ISSLUP, 2010.</p> <p>There were discussions about the upgradation of museum for the Institute at the HQrs. Members also suggested that similar exercise should be made at the Regional Centre level.</p>
7.	<p>The projects of the Bureau may be decimalized, monitored and reported in the annual report under the following six programme modes (Programme : Project : Activities):</p> <ul style="list-style-type: none"> • SOIL resource information dissemination in relation to Advice on Soil management in Rainfed and Irrigated Command areas of the country • SOIL quality assessment and monitoring soil health (As thematic maps, indicators, hot-spot pollution study areas and "soil biotic maps" superimposed on soil maps) • Application of soil information for PERSPECTIVE LAND (SOIL and WATER) USE PLANNING (At Farm and Village level, watershed level, district level, State level and Regional level). • Soil correlation and classification; identification of Bench-mark sites of dominant soil series in each Agro-Ecological Sub-region (about 250 of the RRS of SAUs and ICAR institutes)) for taking up Long-term Agricultural Sustainability field studies. • Basic and Fundamental Research on soils including Post-Graduate Research Guidance for students at SAUs. • Consultancies, training courses, programme partners' meetings and meetings with user Agencies at different levels). 	<p>(i) The projects have been coded.</p> <p>(ii) The achievements in the Annual Report has been arranged according to the following themes and subthemes.</p>
8.	The Bureau, as discussed in detail and based on the presentation made by the	Being processed at SMD (NRM).

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	Bangalore Centre, on the Pilot-project on detailed soil survey for farm level planning, may initiate a nationwide programme in a phased manner, over the next 10 years on land resource mapping for perspective state land use planning and soil-centred farm level planning with appropriate technology transfer package(s).	
9.	Soil survey reports to be considered as scientific outputs and accordingly ASRB should give due importance to these reports in line with the scientific papers.	Matter to be taken up with ASRB.
10.	Vacancies of the Bureau to be filled in as quickly as possible. Director may initiate action based on RAC recommendation.	Action initiated.
11.	The Chairman and the Members RAC decided that the next meeting of RAC should be of two days and it should be held at NBSS&LUP, Jorhat.	The meeting was fixed for 2 days in Jorhat. Due to some unavoidable reasons it is shifted to Udaipur, Rajasthan. The meeting will be for one day but may be extended for another one day (need based).
12.	With the changing scenario the mode of soil mapping needs to be changed in view of the research personnels been reduced both in Department of Space and in NBSS&LUP.	In view of the linked research projects, programme of NBSS&LUP and Department of Space to map natural resources in large scales, the soil mapping legends and the mode will be completely changed. And this will be done with the active participation of the concerned scientists of Department of Space.
13.	According to FAO, 1986 guideline, 800 ha may have to be covered in 20 days in 1:10,000 scale mapping. The refinement of sensors to detect organic carbon in soils is required since organic matter is generally present in soil at different stages of decomposition.	NBSS&LUP has developed a model of understanding to generate database in the form of soil reflectance library to help the engineers, physicists of Department of Space to refine the sensor for better and near-exact images of the earth surface. Out of many soil parameters, organic carbon was part of it.
14.	The importance of wetlands in and around eastern India should be realized and saved to protect the alluvial plains of the country.	NBSS&LUP has got its Regional Centres at Kolkata and Jorhat, which take care of the mapping of wetlands and also suggest alternate land use plans using soil survey data.
15.	To focus on the new projects to be taken up in the next five years.	NBSS&LUP has focussed on the new projects for the next five year plan as has been detailed in the XII Five Year Plan document.
16.	Not only the land which is important but also the social conditions in the villages should be taken care of. For doing so, NBSS&LUP should have a	Various experts at NBSS&LUP with adequate knowledge of soils, geography, agronomy, economics and engineering have been collecting information as part of large scale

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	team who will collect the information at the ground level as available from census and land records data to identify opportunities for the best options and ultimately come out with the land use plan.	mapping projects carried out in different villages and to suggest the acceptable and viable land use technology to the villagers.
17.	RAC to be held somewhere in October, 2012, before the term of the present RAC is over. This is required to sum-up the recommendations and actions taken so far and come out with final bullet recommendations for future line of work.	This is taken care of and the present RAC is being held during October, 2012.
18.	To analyze the problems and potentialities of soil to develop land use planning and/or alternate land use. The utility of follow-up studies on land use planning for the 52 centres NBSS&LUP earlier developed during NATP. A few of those can be taken as case studies in IVLP mode.	The point is well taken and shall be taken care of for all future projects on land use planning.
19.	Soil Resource Inventories needs to be demand-driven and watershed surveys to be added at the first place.	NBSS&LUP has already decided that the soil surveys for inventorisation have to be demand-driven. In doing so, watershed surveys have always been given a priority.
20.	Remote sensing should be taken in research mode and one or two districts should be tried with focussed attention. Research interpretation on spectral signature correlation with soil properties should enjoy elevated position since NBSS&LUP is going to carry out "research" on remote sensing application.	NBSS&LUP, as informed under reply of recommendation no. 2 has been carrying out research on remote sensing. However, the point is well taken and the concerned Division will look into this recommendation.
21.	For land use planning the methodology, district/watershed and block level should get priority.	This has been answered while attending the recommendation no. 8.
22.	Fund for the International training in the budget to be separated to develop the hub of an international training centre (ITC).	This has been a dream project for NBSS&LUP and shall be taken care of, if Council provides fund to do so.
23.	For all ICAR institutes technology park has to be established.	NBSS&LUP will follow the ICAR directions to establish technology park at this Institute.
24.	We need to monitor soil properties to be mentioned and to bring appropriate soil information in public domain for the help of the stakeholders.	Properties of various soils in different agro-eco regions and bio-climatic systems have been compared at different time scales. Most of such informations are available as research articles and disseminated as portable disk format (pdf) to the users viz. researchers, students and planners.