



SOUVENIR

STATE LEVEL SEMINAR on SOIL HEALTH AND CLIMATE RESILIENCE : NEED FOR SUSTAINABLE AGRICULTURE



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LOOKING BACK AND FORTH

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Prologue

Soil research is part of natural resource management (NRM). Whither soil research? And if NRM is the main purpose to take into account the growth of soil science then whither natural resource management? Are we performing our duties to serve the professional society in particular, and our society at large?

For a professional society the path it has traversed in the past carries reminiscences of both success and failure. This requires looking back. This also does necessitate looking forth in the future. The lessons of past are certain as compared to the tortuous turns and twists of future. This appraisal of our own professional societies is extremely important since it transcends human life, expertise, experiences by many generations, even centuries. The immediate present and imminent future of any society borrow its food for thought from its past.

And that's why it is good in looking back and forth.

Past experiences

Looking back is important. It requires scientific auditing. Looking back helps us to understand the ten points. These are

1. the length we travelled,
2. the milestones covered,
3. the laurels achieved,
4. extent of deviation from our set goals,
5. corrections required,
6. level of satisfaction and happiness with our performances,
7. level of services provided for
 - a) science,
 - b) society,
 - c) people,
 - d) farmers, and
 - e) their families (for agriculture-related societies),





8. measurement of performance,
9. threshold values of satisfaction, and
10. feedback of the society/stakeholders.

We need to understand and comprehend these issues. The moot point is our society at large, and the students, administrators, and the parents have huge demand from us. Their expectations shall keep on increasing with our success. We need to be ready for criticism also. We need to keep pace with the societal requirements to fulfill their aspirations.

So when we look back and see that we have walked so far, we are required to set our present responsibilities also.

People say a professional cannot be satisfied with his/ her performances. Complacency might dampen the rate of progress of the society. A professional cannot stop. He/she is in a mode of searching; searching truth, understanding nature to manage these vast natural resources. In this age of technology and communication we need to be more communicative in replying and responding to various demands of our colleagues. At times the calls may be tough but we have to express our positive mindset to make our stakeholders happy and satisfied.

Present state of work

Be in research and/or in education preparedness is must to satisfy the students as well as the society. For class room as a teacher/professor knowledge of latest happenings in the area of study should be made available to students. This demands carrying out state of art research

To understand the present day research reading, writing, field experience, attending national /international seminars, listening to experts and bringing funds from outside agencies may be in our present activities. This opens the dialogues between the funding agencies and the organizations to carry out work in demand-driven mode.

Future initiatives

The way we identify extinct plants and animal species we should address issues of soils which are in the process of extinct. Soil and natural resources are in continuum. They are seamless.

So if one part of the globe is in trouble other parts will also be affected.

We may think about the following issues for future research

1. Indian soils and ecosystem services in this book. There are many other ecosystem services soils/soil minerals may provide.
2. animal husbandry, fisheries, pharmaceuticals, and fertilizers





3. exploring soil functional diversity of soil biota and the spatial aspects of soil properties to using small scale to large scale natural resource information
4. involve professionals from other disciplines to promote the contribution of soils to ecosystem services delivery and human well-being,
5. use the existing resource inventory for local and national policy planners for use and management of natural resources and then to find out gaps in research in the field of ecosystem services
6. hot spots for conservation of resources to sustain ecosystem services at the spatial level using remote sensing and GIS
7. expand the soil biological database
8. expand the concept of soil carbon sequestration not only for its organic form but also the inorganic form so important for soil degradation and ecosystem services
9. involve inter- and trans disciplinary research experts in addressing regional and global issues
10. advocate soil security, soil threats, soil diversity, soil conservation, and soil protection for
11. environment and societal benefits, and,
12. develop exact decision support tools for assessment and monitoring of soil resources in an ecosystem services context.

We should think globally. Albeit act locally. Remember our next generations are extremely intelligent. They are armed with all latest technology. We need to quench their thrust of knowledge. For the benefit of these young working force of the nation we need to be prepared with our knowledge, compassion and wisdom. Our classrooms, laboratories, and farms need to keep pace with other developed nations to make our students ready to face the world. They are our children. Accordingly our education and research agendas need a revisit.

Epilogue

Dear delegates, I am sure many of us are focussing on a few of these issues I mentioned. Please take note of other points as well. You may discuss with your colleagues and also with your students. On many occasions your students may come out with bright ideas.

For post graduate studies consider students as your colleagues. Encourage them to take a few classes under your guidance. Encourage them to undertake and execute small research projects. That way you will provide a great service to the nation in building gennext professors and scientists.

Natural resource management is not bounded by only soil scientists. Fishery, animal science, dairy, forestry, economics, social science, geology, archaeology, ecology, environment are also directly /indirectly related to part of natural resource management (NRM). That truly makes natural resource management (NRM) as an interdisciplinary, multidisciplinary, and transdisciplinary. It's a huge shift in our future approach.





I cherish a dream of involving everyone in our endeavour to serve science and to search the truth. I have a fond hope that the message generated in this national seminar of Indian Society of Soil Science (ISSS) at this Dapoli Chapter will reach New Delhi to sharpen their future programmes. It's also a sacred duty of Dapoli Chapter officers to do this.

Research and education (including extension education) are two sides of the same coin. These are simultaneous processes. Research is a never-ending profession. Research goes on; only the researchers manifest in a new form with fresh objectives among next generations. As a researcher you may find an associate very close to your thoughts; on many occasions you may not be so *fortunate*. In that event you might feel that you are truly alone! Then remember Tagore, "*if no one responds to your call, go on alone.....go on alone.....*".

God bless you all, always.

Further Reading

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3. Bhattacharyya, T. (2021a) Soil Studies: now & beyond, p.379, Walnut Publishers.
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6. Bhattacharyya, T., Wani, S.P. and Tiwary, P (2021) Empowerment of Stakeholders for Scaling-up: Digital Technologies for Agricultural Extension, In: Scaling-up Solutions for Farmers - Technology, Partnerships and Convergence (Eds. S. P. Wani, K. V. Raju and T. Bhattacharyya), Published by Springer Nature Switzerland AG, Switzerland, pp.121-148.
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