

Response from ASSSI to the NCST regarding 'Managing Australian Soils – A Policy Discussion Paper'

Stakeholder Name and Address:

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Plus discussion with ASSSI members (LWA link circulated in *Soil Crumbs* e-bulletin and posted on front page of ASSSI website: www.asssi.asn.au)

This response is made on behalf of the society with the sanction of the ASSSI Federal Council. It seeks to address the principal issues that concern ASSSI and not the detail except where that is seen to directly address the professional body. It needs to be noted that the ASSSI has a diverse membership and that it is therefore impossible to represent the potential views all members on points of detail in the discussion paper.

Response summary:

- The ASSSI applauds the initiative of the National Committee on Soil and Terrain (NCST) for commissioning the policy discussion paper 'Managing Australian Soils'.
- The ASSSI lends its support to the overall direction and recommendations of this paper.
- In particular, the ASSSI through its extensive network of several hundred soil scientists at all career stages, in all disciplines and in government and non-government employment, can readily identify key experts for peer review, advisory panels and contracted work in soil science research, education and management.
- Specific responses to the suite of questions from the NCST are provided below.

1. Do you or your organisation support the need for a more strategic approach to soil management (circle option that best matches your opinion)

Strongly agree

Neither agree
or disagree

Strongly disagree

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The question focuses on whether there is the need to develop a national framework and policy for the protection of soil and preservation of the capacity of soil to provide economic, environmental, social and cultural functions. This would be a coordinated approach that involves all levels of government in partnership with industry, academia, landholders and the community.

Comments:

The Australian Society of Soil Science Inc. (ASSSI) supports the proposal to develop a national framework and policy for the protection of soil and preservation of the capacity of soil to provide economic, environmental, social and cultural functions. Through organization of national conferences and workshops the ASSSI has, for more than fifty years, provided a forum for national peer review of soil science, soil management and research. Many of the society's members, through their government agencies and by representation on national committees, are already actively involved in pursuing objectives that would contribute to such a framework and policy. Most of these activities though are not driven by government demand for an integrated

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soils framework but are focussed on more specific priorities. Soil scientists have been flexible in adapting to work within the terms of reference of these priorities (for example, salinity and water quality) and have made significant contributions. However, soil as a primary natural asset has in many ways been invisible in these projects and its importance underestimated and under-publicised. Short term (could we call them fashions?) in government priorities have not always served the fundamental needs of NRM well as they have led to:

- inconsistent, spatially-fragmented and discontinuous approaches to data acquisition and management,
- dilution and diversion of research effort, and
- erosion of critical mass and capacity (in agencies and universities) to provide reliable data, information and advice.

Critical to the success or implementation of a national framework will be the agreement by the State governments to align with this and to make budget allocations, presumably on a shared basis with the commonwealth. The framework will need to be long term and transcendent of election cycles.

2 Is there overall support for the perspectives provided in the discussion paper?

Strongly agree

Neither agree
or disagree

Strongly disagree

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This question is asking about your agreement, or otherwise, with the analysis in the paper on the current policy and delivery framework for soil management. We are also asking for the identification of areas in the paper where there is no support.

Comments:

In principle, the ASSSI is strongly in agreement with the broad observations of this paper. Human and financial resources committed to soil science and soil management are spread too thinly across the country, there is little consistency in the types of soil data being collected by different agencies, there is little or no coordination in the types of soil research being carried out (leading to duplication in some situations), soil extension and training programs are carried out on an ad hoc basis, and there are too few soils-trained graduates being produced by Australian universities to meet demand. Furthermore, soil, as a natural resource of great importance to the country, has been viewed as a poor second cousin to water in recent years, making it more difficult to gain government attention and funding.

The ASSSI believes that this situation will only be effectively addressed if a new agency is formed which champions and coordinates the “soil effort” at the national level. At present, no single organisation, department or agency has the mandate or capacity to coordinate, at a national level, soil monitoring and data collection, soil science R&D, soil education and training, and soil extension activities. Such a new agency would need to set the soil monitoring, R&D, education and extension priorities, and would need to be given the power to dictate that spending matches those priority areas.

Page 15 para 2

We do not agree with the perspective that implies ASSSI is failing in its purpose – see section 11.

HSSF and need for a new program

As indicated in the discussion paper, “the time is ripe for a new national soils R&D program, both to target key knowledge gaps and to play a crucial national coordination role in soils research” (page 51). However, the ASSSI believes that this program should be genuinely “new” and not simply a re-badging of an existing program such as Healthy Soils for Sustainable Farms. Such a

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new R&D program, developed and overseen by a new national agency for soil, should have a clearly defined set of priority areas agreed upon by soil science experts and those in the highest level of government departments that fund other R&D programs (such as R&D corporations).

- 3 What is your role and responsibility for managing Australia's soils?
This question is to gain an insight into the different roles and responsibilities played by stakeholders in managing Australia's soils. This will raise awareness of the critical role stakeholder's play.

The ASSSI has a large, diverse and national membership

As a society we have a membership in excess of 700 (715 at December 2008). The society is a voluntary organisation with an annual subscription ranging from 50 to 115 dollars. The ASSSI is a federated entity, with a Federal Council and seven Branches – New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania and Riverina. Each Branch has a committee comprised entirely of volunteer members, while the Federal Council is comprised of the Branch Presidents, a Federal Executive and an Executive Officer. Only the Executive Officer, who maintains a "Federal Office", is salaried (0.6 FTE). Members are engaged in soil research, extension and policy across the full range of soil management activities and throughout Australia. Members are in universities (as students and staff), in regional, state and federal government agencies, are employed in many consultancy firms or run their own businesses. There are also a significant proportion of members who have retired from their jobs but continue to give a lifetime of service, actively participating in the ASSSI as well as giving support to soils projects and practitioners.

Members may also attain accreditation as 'Certified Professional Soil Scientists' (CPSS).

The ASSSI is not directly involved in soil management

Individual members have their own accountability for soil management depending on their terms of employment or self-determination. The ASSSI therefore is not directly engaged in managing soil and does not have a budget or external funds to execute soil management projects. Branch activities are focussed on lectures, presentations and field trips that deal with many aspects of soil science and management. These activities provide opportunities for cross-fertilisation of ideas and general advancement in knowledge, and are usually also open to non-members.

The ASSSI's strategic plan

The ASSSI has a strategic plan (attached) that defines the vision, mission and objectives of the society. This planning process has been led by previous presidents and executive members of the society and a revised plan was completed in 2008 under the guidance of Dr Stephen Cattle during his term as president. The completion of this plan marks a new stage in the ASSSI's perception of its role and provides a more precise expression of the intention for future activities sponsored by the society.

- 4 What do you need to assist you in meeting your interests in managing Australia's soils?
This is about what you need, as a stakeholder having a role and responsibility in managing Australia's soils. The discussion paper highlights a number of areas that need improvement; however, we would like your perspective on the current or future impediments to meeting your goals.

In the discussion paper there are specific ideas suggested on a way forward for better soil management, including practical measures to rebuild commitment, knowledge and capacity.

The ASSSI agrees with the areas that need improvement. The society's strategic plan has been created with the expectation that there will not be any major impediments to its success, however recognition and invitation from areas of government would enable us to achieve our intention to engage more in policy. It is worth noting, in the regard, that the tri-societies ASA-CSA-SSSA in the USA fund a [science policy office in Washington DC](#), staffed by two full time officers plus interns. This office coordinates information to a [congressional soils caucus](#) on matters of importance to the societies and advises its membership on how to lobby their state

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representatives. The cost of running this office is estimated as \$US 250,000 p.a. The ASSSI does not have resources to do more than employ a part-time EO at a modest salary to service general administration of the society business. If the ASSSI was invited to nominate a representative on relevant committees such as the NCST then this would assist.

- 5 Do you believe there is a need to build a case for strategic reinvestment in soils?

Strongly agree		Neither agree or disagree		Strongly disagree
1	2	3	4	5

Would you contribute to this process?

The ASSSI would like to be involved in building the case for strategic reinvestment in soils. Through the society's Federal Council a resolution can be made to engage appropriate members to contribute to this process. There is a limit to what can be achieved in a voluntary way, but, if funding was available to contract a CPSS through ASSSI, then we can offer more substantial input independent of government or other agency interests.

- 6 Do you support the suggestions put forward to gain a cost-effective monitoring system of soil condition in Australia (p. 41 of discussion paper)? Are there any changes you would make to this list? What is most critical to you, as a stakeholder, to rebuilding the knowledge base in soils in Australia?

Strongly agree		Neither agree or disagree		Strongly disagree
1	2	3	4	5

This is about how we, all stakeholders, gain and nurture soil information to build a coherent knowledge base to inform management and policy needs

Comments:

We assume that it is the list on page 49 that is being referred to, not 41.

It is worth adding to the list the provision of training and funding to agencies that will carry out the monitoring. Cost effective monitoring will require trained personnel on the ground in the regions.

The structural diagram (Figure 10 on page 50) has the main elements for structural coordination. The devil will be in the detail with respect to accountability at all levels and one could anticipate considerable transaction cost in making this work. This is not something that could be embarked on lightly or without substantial funding.

- 7 Do you agree that there are adequate people on the ground with sufficient skills to interpret and apply soil information? If no, do you see this as an impediment to you as a stakeholder achieving your goals with regards to soil management?

Strongly agree		Neither agree or disagree		Strongly disagree
1	2	3	4	5

This question focuses on whether there is a need for a better extension effort in Australia for soils. It is noted in the report that the situation of decreased capacity on the ground to assist stakeholders is a problem shared across the Natural Resource Management sector.

Comments:

Mixed quality of soil knowledge and advice concerns the ASSSI

Extension practice and variety of advisers currently in the field is of some concern to ASSSI and has been the subject of much debate, particularly around topics such as biological farming, 'bugs in jugs', and soil carbon. The ASSSI exists to promote discussion around the science of soils and

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therefore supports extension activities that are evidence-based or at the least founded in sound hypotheses.

Popular promises promoted by various commercial interests regarding what can be achieved in soil management through the use of largely unproven products is a worrying development that seems to increasingly dominate 'extension' or advisory services in the rural sector. These promises are also often accompanied by pseudo-religious and spurious arguments against scientifically-based approaches to primary production.

There is, therefore, a wider issue of the perception of government funded research and the scientific community in general. All this adds up to a confusing array of knowledge and advice that has to be picked through by those physically engaged in gaining production from soil, and also by those responsible for writing policy and determining funding priorities. Links between a sound knowledge base and extension services must be strengthened.

ASSSI is represented on the Australian Journal of Soil Research (AJSR) Editorial Advisory Committee. This connection indicates a strong long-term commitment by ASSSI to soil-related knowledge development. The next challenge, of course, is to make this information more accessible to end-users via some sort of community Knowledge Bank.

The ASSSI can provide recognition and accreditation of soil practitioners

The ASSSI recognises that there is a growing need for soil practitioners in extension, but does not have specific goals with respect to soil management, although many of its members and the organisations that they work for are explicitly charged with understanding and managing soil. In this respect sufficiency, or not, of people on the ground is not an impediment to ASSSI per se.

The ASSSI's role, specifically, through the accreditation scheme of CPSS, is to ensure that clients requiring competent advice, or execution, of research, data interpretation and soil management, can identify bona fide experts.

The ASSSI's network can be used to ensure appropriate QA in future initiatives

Decreased capacity and an aging demographic of experts is an important issue that does require attention. ASSSI can assist with future efforts to address this by providing access to its membership network to ensure that any new initiative in extension services is supported, peer reviewed and counselled by those with appropriate knowledge of soil science and management.

- 8 The discussion paper proposes two options for rebuilding capacity, either by specialised soils-focused education and training, or more general training programs with soils modules as plug-ins. What do you think is the best option? Can you suggest others?

In preparing a response on behalf of a society of several hundred members it is difficult to say that there should be an 'either/or' with regard to style of capacity building. There would be many and diverse views on this if all the members opinions could be canvassed. One would also need to define what is meant by the terms 'specialised soils-focused education' or 'soils modules as plug-ins'.

There is a shortage of skilled soil practitioners who can train others

The ASSSI agrees that there are presently not enough trained soil scientists or university graduates with significant knowledge of soil management, to meet the current demand. We also agree that adult education courses in soil science and management, and 'train the trainer' workshops are a necessary and desirable part of any national plan for improving the management of Australian soil. At the moment, however, there is a distinct lack of coordination between educators/trainers, and there would appear to be considerable replication of effort in preparing the materials for such modules/courses. Universities, the CSIRO, branches of ASSSI, state government departments and consultants have all been involved, to varying extents, in the provision of education and training materials relating to soil science and soil management.

Invariably, different sources of funding have been used to produce and deliver the educational materials, even though the content may be quite similar. The ASSSI is also concerned that in some

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cases, the trainers of the trainers do not necessarily have the skills and experience to underpin their courses with the necessary rigour or knowledge.

The ASSSI is actively involved in capacity building for the soils profession

Through two main mechanisms, the Society is encouraging the upskilling and development of soil scientists and para-soil scientists.

Firstly, for a number of years now, various ASSSI branches have run soil training workshops ranging in duration from one to five days. Attendees have typically included ASSSI members wishing to refresh or improve their soil science knowledge, and/or para-soil scientists such as agronomy consultants and engineers wishing to upskill in aspects of soil science.

The second mechanism of capacity-building is the development of the Certified Professional Soil Scientist (CPSS) scheme run by ASSSI. Members of ASSSI may seek to be accredited with CPSS status if they can demonstrate prior training in soil science and/or long periods of active soil-related employment, plus at least 50 hours of on-going professional development every year. This scheme is now beginning to expand rapidly with approximately 100 ASSSI members now accredited with CPSS status, and a growing recognition of the value of CPSS accreditation.

Increasingly, CPSS accreditation is being incorporated into job descriptions as an essential or desirable criterion, and consultants in particular use accreditation as a “selling point” for securing contracts. As a consequence of this, younger soil scientists and consultants have been particularly encouraged to undergo further professional development to achieve accreditation.

Interest in soil science can be fostered in early education

An aspect of soil education not explicitly addressed in the discussion paper is that of primary and secondary school education. The current low enrolments in agricultural and environmental science degrees at universities are due, in part, to the apparent unattractiveness of science to school students. The ASSSI believes it is critical to have a program in place to make primary and secondary school students aware of the importance of soil management from an early age.

Various ASSSI members have been involved in the preparation of educational materials for school children through initiatives of their employers (generally state government departments), but again these have been put together in *ad hoc* way and have undoubtedly resulted in duplication. A national source for core material could save repetition of efforts in future.

- 9 The paper identifies immediate opportunities to improve the soils literacy of the regional NRM investment model. Do you agree with the list of opportunities that should be developed and promoted? Are there any changes you would make to this list? If you are involved in the regional NRM investment model please confirm this, and indicate if you are willing to support these opportunities and if not, why not?

Strongly agree

Neither agree
or disagree

Strongly disagree

1

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A key theme in the paper is the importance of integration, as environmental assets are all dependent upon one another to function. This theme applies to human resources that are undertaking a role to improve soil management.

Comments:

The ASSSI agrees that clear methodology and model RCTs and MATs (as outlined on page 60) would help considerably in servicing regional to national needs in soil condition monitoring and reporting and therefore prioritising NRM investment in soil management.

- 10 What options do you see as the best ‘way forward’ and why?
This is a critical question and highly important to the NCST members. Although there is no commitment to specific ways forward understanding stakeholder’s options assists in future deliberations

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The ASSSI supports the general thrust of this discussion paper and would like to be involved in future developments insofar as it can be. The society does not presently have the budget or mandate to be a soil research and development provider/funder, to act as a national soil data collator, or to provide soil extension services. Nor are any of these functions within the society's strategic plan. Moreover, the majority of our members are employed by agencies who are directly engaged in such functions.

ASSSI is the peak body in Australia for professional soil scientists

However, by way of having a membership containing most, if not all, of the prominent soil scientists in the country, the society is in a strong position to contribute to the R&D priority setting of any new agency established to coordinate soil-related activities in Australia. Similarly, the ASSSI could (and should) contribute to the R&D priority setting of current funding agencies that invest in soil R&D. At present, the ASSSI has not been directly asked for input in this regard. We therefore draw attention to the ASSSI's vision '*as the peak body in Australia for professional soil scientists*' and mission statement that '*ASSSI will promote the importance of soil in the Australian environment and the development of certified professional soil scientists and soil managers*'.

- 11 Open comment - we welcome any comments on the paper including, but not limited to:
a. Requested amendments / additions

Please edit the paragraph on page 15:

'Professional soil science bodies appear to be moribund and missing in action, both in public policy debates, and in building capacity within the profession. The contrast with scientists from the water and biodiversity sectors is stark.'

Our reasons for this request are that, as the ASSSI is the major professional soil science body in Australia then it is an obvious target of this opinion. It is an inaccurate and inappropriate representation of both the role and the activities of the society. The responses that we have given to the NCST's questions above should serve to explain this.

The Australian Soil and Plant Analysis Council (ASPAC) might feel similarly piqued as they serve a significant role in ensuring standard protocols and methods nationally for soil analysis.

The activities of the ASSSI and the ASPAC have been underestimated and neither has been referred to explicitly in this paper. A positive counterpoint is needed.

The statement on page 15 also reflects very poorly on Andrew Campbell's background research for this component of the paper. ASSSI was not approached during the preparation of any earlier drafts and it is most unfortunate that such a sleight, shot from the hip, is now on the public record as the only reference, albeit oblique, to our society in the 83 pages of the discussion paper.

Yes, there is a contrast with the water and biodiversity sectors, but, as Oscar Wilde said, 'comparisons are odious', and, in this case there are many contextual differences between soil and these – Campbell points out some of these differences in other parts of the report in any case.

Photograph page 32

Text is misleading 'classic illustration of contrast between carbon-poor farmland after rain..'. The soil on the right side of the fence is obviously dispersive (sodic?) but this is not mentioned.

Attribution of soil condition in this image to Carbon alone is ridiculous.

- b. Is there an appropriate level of awareness and understanding by the community of threats to the soil and the potential consequences?
- c. Is there an understanding of soil condition in your area/ industry and the potential capabilities of those soils?
- d. What are the extension / education projects we need to have to enable sustainable management of soils?
- e. What information do you need to have to meet your business goals?

The ASSSI would like to be kept informed of developments following from this discussion paper and offers the services of its office for distribution of information to the ASSSI membership.

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Attachments:

ASSSI Strategic Plan

ASSSI Rules

ASSSI CPSS Accreditation Handbook

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