

# CRITICAL ISSUES, KNOWLEDGE GAPS AND HOW DO WE GET MORE INVESTORS IN?

## EXECUTIVE SUMMARY

Analysis of the notes from the thirteen workshop tables showed there were eight main categories of concern and discussion.

1. Definition
2. Capacity
3. Policy and legislation
4. Biophysical issues
5. Social issues
6. Economic issues
7. Holistic/systems issues
8. Education, training and knowledge

### 1. DEFINITION

The participants at eleven of the thirteen tables felt that definitions surrounding NSF needed to be improved, including better linking the concept with other more established ideas. Key points included:

- Defining the big picture, the vision for NSF.
- More clearly defining who is driving NSF, and what is the concept and the practice of NSF - at different scales, for the benefit of farmers, planners, and advisors.
- How is success defined? How is this monitored and evaluated?
- Defining the language – sustainability, interpretation of landscapes, irrigation vs rehydration.

### 2. CAPACITY

Participants at eight of the thirteen tables expressed concern that there was currently very little capacity within the system; especially NSF itself, landowners and managers, and governments at all levels, to deal with the rapidly growing public demand for NSF information or to support implementation of the approach.

Currently NSF = Peter Andrews. Because there is no manual or education program, there is effectively nobody else with the skills and knowledge to implement NSF other than Peter Andrews. While there are many skilled landholders trying, or wishing, to implement components of the concept, with no clear mandate to follow, they are coming up against institutional barriers, or having to rely on conventional institutional views of landscape management. These local champions need the support of their local authorities so they can provide local leadership and implement locally relevant NSF trials.

### **3. POLICY AND LEGISLATION**

Participants at ten of the thirteen tables saw current government policy and legislative constraints as critical impediments to the broader adoption of NSF. Some tables saw these issues as a much bigger impediment to adoption than the lack of scientific research.

#### *Issues:*

- Policy and regulatory impediments and their review to enable NSF implementation.
- Licencing of NSF, property and water rights even mortgage law as it relates to agricultural land.
- Greater coordination, integration and institutional support for NSF.

There was a strong thread amongst the tables that suggested that the many regulatory barriers should be lifted in some way so that more trials could be set up across the country. This would require greater coordination of effort amongst the responsible agencies in identifying and addressing these impediments.

### **4. BIOPHYSICAL ISSUES**

A broad range of biophysical issues and questions were raised across all the tables. The most popular issues for discussion were those relating to hydrology and water quality. Interestingly the issue of weeds did not receive a great deal of discussion. Biophysical issues discussed included:

- Hydrology and water quality
- Soil health
- Animals
- Plants (inc. weeds)
- Engineering
- Biodiversity
- Reading the landscape and landscape function
- Extreme events
- Nutrient cycling
- Climate

Ultimately NSF raises many biophysical questions, giving huge scope for research in this area. The issue was raised that lack of full knowledge of biophysical effects, should not be an impediment to the broader adoption of NSF. Research can occur concurrently with the further establishment of demonstrations. This would require coordination with research institutions and public authorities, and most importantly should involve communication with the local communities.

Two key questions worth noting were:

- What are the downstream effects on water availability?
- What are the effects on the water cycle and its interaction with vegetation?

## 5. SOCIAL ISSUES

Social issues are about human relationships. In the case of NSF those relationships occur at the person-to-person level through to the cross-institutional and inter-government level. Two key points were:

- Trust and respect between ALL stakeholders (13)
- Critical issue: how to broaden the debate, make the issue and approach participatory – e.g. indigenous, local knowledge along side science. (8)

Nine of the thirteen tables had a concern for the social issues that currently surround NSF. Some of the issues raised would be also critical for consideration when implementing the approach more broadly.

The social issues could be broken into three sub-categories; community, public and institutional. Community ownership of NSF demonstrations was seen as an important goal, given the concerns for broader impacts. Scientists should also try and work closely with communities when studying NSF demonstrations.

The urban/rural divide issue was raised. It was noted that a significant cultural change was required in how we viewed the landscape and how those that were seeking to manage it well should be recognised and supported by the broader public.

## 6. ECONOMIC ISSUES

The economics of NSF was hotly discussed. 11 of the 13 tables discussed economic issues and knowledge gaps. Topics included:

- ***Investment frameworks*** – How should NSF be funded? What should be the balance between public and private investment? Should NSF be funded by grants, loans or both? Should funding be tied to on-farm performance measures?
- ***On-farm productivity and costs*** – What is the balance between productivity gains and the cost of implementing and managing NSF?
- ***Recompense to Peter Andrews*** – What is fair compensation for the time, resources and sacrifices Peter Andrews has put in to make these issues public?
- ***Taxation***- how can the taxation system provide extra incentives to implement NSF?
- ***Ecosystem services*** – Economic incentives for clear public benefit environmental management; e.g. water quality improvement, biodiversity enhancement, carbon capture.
- ***Landuse*** – What range of land uses and enterprises is NSF applicable to?

## 7. SYSTEMS/HOLISTIC

NSF argues its is systems level approach to landscape planning and management. Overwhelmingly, discussion focused on systems issues. Every table made some comment about the systems nature of NSF or raised system level concerns such as downstream effects. 10 of the tables specifically referred to the need to consider environmental, social and economic issues when doing monitoring and evaluation of NSF.

While the term NSF implies farming, the approach focuses more so on the functioning of the landscape or the watershed, than on farming per se. It is argued that the principles of NSF can be applied to any land use or combinations of land uses within a watershed.

By the same token, holistic thinking considers environmental, social and economic issues as inseparable. Does NSF stack up on these three counts?

The systems level issues raised at each table can be broken into seven subcategories as follows:

- ***Watersheds*** – What are the broader catchment effects of NSF? What is the role of water in the functioning of the landscape?
- ***Monitoring and evaluation*** – should consider environmental, economic and social issues.
- ***Whole farm/landscape planning***, NSF should integrate with.
- ***Transferability*** – How applicable is NSF to landscapes beyond Tarwyn Park?
- ***Risks*** – need to clearly identify risks.
- ***Sustainability***
- ***Public v private costs and benefits***

One point stands alone:

- Don't get too complex (3)

## **8. EDUCATION, TRAINING AND KNOWLEDGE**

Twelve of the thirteen tables discussed issues specifically relating education, training and knowledge sharing.

### ***Packaging the approach and targeting the message***

There was strong agreement that NSF needed to be better packaged and targeted.

### ***Training and accreditation***

The need for a multi-pronged accredited training package resonated.

### ***Influencing politicians***

One table felt it was important to influence and educate politicians.

### ***Demonstration sites***

Nine tables discussed the potential for the set up of well-monitored, locally relevant and multi-property demonstration sites across a wide variety of landscapes.

### ***Best practice***

Seven tables felt that NSF should be incorporated into best practice discussions and publications.

### ***Institutional arrangements***

The idea of a CRC for NSF or an NSF Foundation was raised.

## **9. NSF ACTION PLAN**

The NSF Action Plan is based on a synthesis of the key issues to come out the workshop.