



Participatory Approaches to Creating Change On-Farm; Sharing Australian Experiences

**Dr Jay Cummins
Rural Solutions SA
South Australia**

The background of the slide features a landscape with a field of golden-brown crops in the foreground and a sky filled with soft, white clouds. The overall tone is warm and natural.

Overview of Presentation

- **Overview Participatory based approaches to extension; Farming Systems Development at the farmer level**
- **Socio-economic considerations to achieving on-farm change and adoption**
- **Case studies associated with participatory driven farming systems development; Eritrea and India**
- **Opportunities for Iraqi Agriculture**

Australian Agriculture has limitations



**A common scene in Australia
back in the 1980's**



'Where she blows is where she grows'
**fortunately farmer attitudes
have changed!**



Now there is NO excuse for soil erosion with ZT seeding systems





Cropping trends in Australia

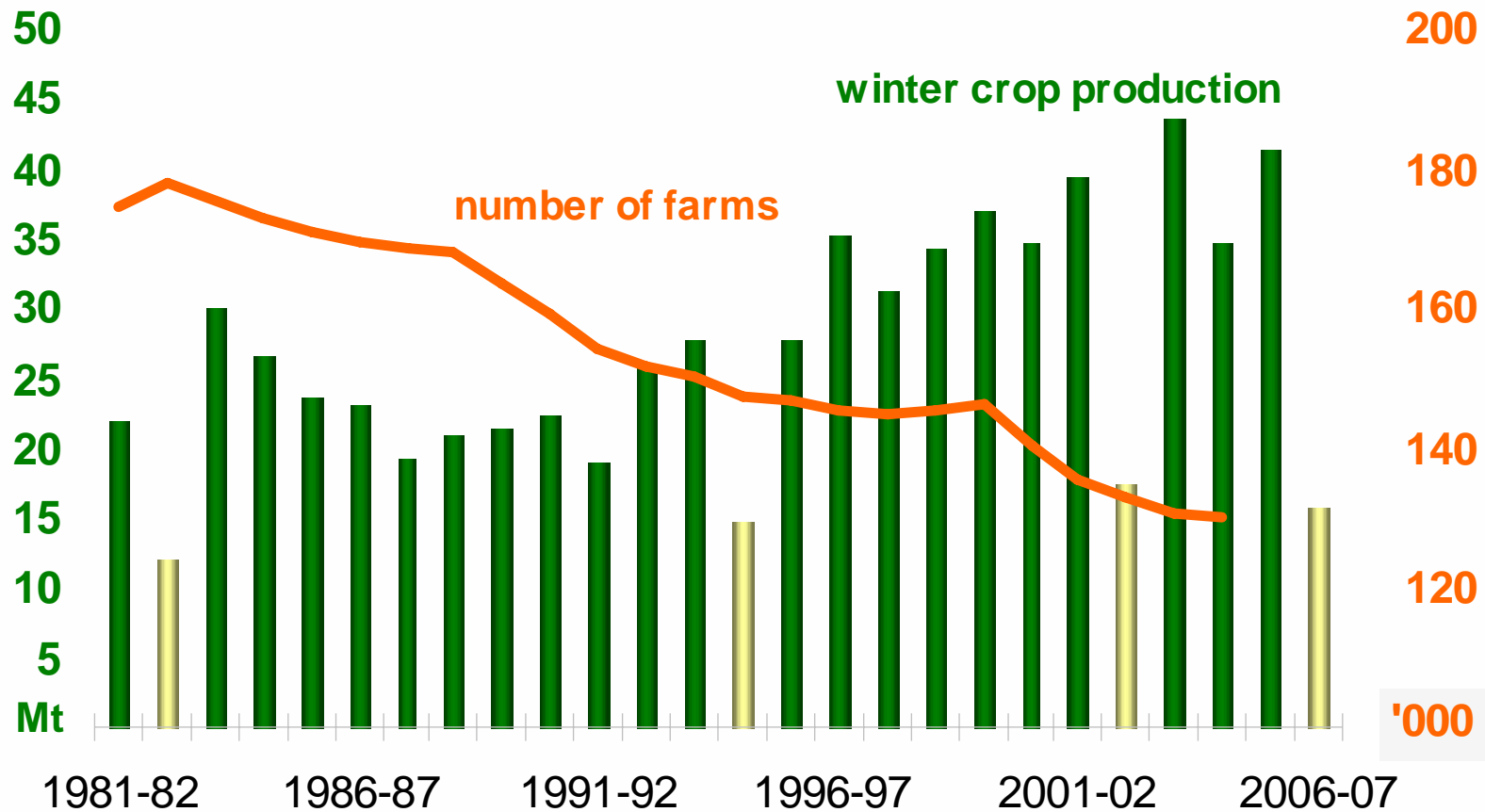
- **On-farm adoption of new technology driven by the need to develop profitable & sustainable systems, with high water use efficiency**
- **Adoption of conservation farming systems (no-till, stubble retention) a critical success factor**
- **Increased farmer awareness & understanding of sub soil constraints, yield mapping technologies**
- **Crop monitoring systems; assist in optimising inputs, introducing new crop types and practices**
- **Participatory based farming systems development**



The Australian Agriculture Environment

- **Family operated farm businesses, many operate in relative isolation**
- **Farm businesses under financial pressures, recent droughts, competing against subsidised grains on World market**
- **1977 to 2007 # grain producing farms ↓ 47%**
- **Productivity increases 2 to 5% per annum**
- **Agriculture as a career losing its attractiveness, competition from mining sector for farm labour** >

Trends in Australian Agriculture



Australian Extension Systems





Australian Extension Systems

- **Reduced support base from Government**
- **Stakeholders working in partnership with one another, farmer organisations, researchers, agribusiness**
- **Farmer-driven through empowerment @ group level, 'a farming systems approach'**
- **A strong participatory approach; farmers drive the research and extension agenda**
- **Challenge to recruit and retain staff in agriculture**

Private Sector Influences

- **Now have a far greater influence over “on-farm change” and adoption**
- **The ‘agribusiness sector’ include farm input suppliers, machinery, finance, food processing and marketing companies**
- **Private agricultural consultants employed direct by around a third of farmers**
- **Consultants now having a far greater impact in relation to on-farm decision-making**

The background of the slide features a landscape with a dirt road winding through a field of golden-brown grass. The sky is filled with soft, white and grey clouds, suggesting a bright but slightly overcast day. The overall tone is warm and natural.

Successful Extension Systems.....

Farmer and group characteristics

- **Farmer participation – farmers setting goals direction, and actively involved at all levels**
- **Farmer leadership; a clear sense of group direction and outcomes that are to be achieved**
- **Practical “in the field” activities to assist in adaptation of new practices and systems**
- **Open communication, interaction and sharing of ideas and experiences**
- **A continuous improvement philosophy**



The challenge

How do we maximise impact in an environment of reduced government and research investment?

Strategies may include;

- **Agribusiness / private sector involvement in the delivery of programs, and key technical issues**
- **Empowerment of local neighbourhood ‘farmer groups’ who develop and run their own on-farm trials and demonstrations**
- **Identifying what the farmer wants, and in what context**

Farming Systems Development through participation



Farming Systems Development

Development of local farming systems, using a participative group approach

- **proving to have a major impact on the development of improved farming systems**
- **Farmers identify, design and assist in carrying out local on-farm trials and demonstrations**
- **Through training and education processes, farmers gain new skills and abilities**
- **Provides opportunities for introducing crop monitoring systems and other new innovations**



Farmer Group Empowerment

- **Farmers are encouraged to be self-reliant, and drive the research and extension agenda**
- **Farmer participation is critical to developing local farming systems and 'best practice'**
- **Farmers sharing their skills and experiences, learning and discovering together**
- **Extension has a largely facilitation role, utilising local knowledge systems**
- **Farmer groups are encouraged and actively supported by both the government and private sectors**



Farmer attitude to change

Farmer attitude change

- **Technology adoption driven by:**
 - **Personal characteristics of the farmer**
 - **Risk Management & the environment of operation**
- **Characteristics of the technology or innovation**
 - **How appealing is it,**
 - **How easy is it to 'fit into' local farming systems**
 - **Cost and benefits of the technology**

Creating change by understanding farmer behaviour





Agricultural Extension failures

- **Agricultural extension has created awareness, but not necessarily change on-farm**
- **Traditional tech transfer models linear in nature**
- **Extension approaches have undervalued the true value of a farming systems approach**
- **Farmers failing to adopt described as laggards**
- **Logical reasons for non-adoption – just ask farmers**
- **Socio-economic characteristics complex** >



Adoption environment - complex

- **Not all farmers in a position to adopt nor desire**
- **Segmentation assists in understanding audience**
- **Farmer decision non-adoption needs to be respected**
- **Target motivated farmers who want change and ↑ profitability**
- **Support farmers having uncertain futures who want to leave the industry >**



Community Pressures and Adoption

- **Conservative' farmers viewed as 'benchmarks' by progressive farmers**
- **Stereotyping of farmers as 'laggards' has done little to explain the logical reasons for non-adoption**
- **Judgemental angst in communities, those who adopt v's those who do not**
- **Farming is a competitive business, with interest in 'buying out the neighbour' >**



Socio-economic Approaches to Creating Change On-farm in Australia

In terms of the capacity & capability to introduce change on-farm by South Australian farmers;

- Only one-half (51.5%) have the capacity and capability to adopt improved farming practices.**
- Extension programs need to identify and target farmers more likely to respond to, or have the capacity to introduce change**
- This approach is described as a market segmentation approach to understanding farmer behaviour >**

Contrasts in Agriculture



Eritrean Agricultural Systems





Challenges for Eritrean Agriculture

- **Achieving food security primary aim**
- **Spike in world food grain prices as serious concern**
- **Competition from bio-fuels, world food stocks**
- **Greatest impact rain fed cropping systems**
- **Lift production of subsistence farmers**
- **Target low-input technologies and practices, within a risk management framework** >



Agriculture in Eritrea

- **Subsistence based farming systems**
- **Nomadic pastoralism in many regions**
- **Competition between cropping and grazing**
- **Little change over the last century**
- **Frequent droughts**
- **Food security issue; 60-75% self-sufficiency** >



Social Characteristics of Farming

- **Land tenure systems for many on a 7-year rotating ownership**
- **Village elders/councils influential in relation to;**
 - allocation of land,
 - management of communal grazing
 - adoption of new practices and varieties
- **A highly participatory approach is taken**
- **Management of risk at farmer level is critical** >



The 'local power' of leadership

“Over time the pastoralists in Eritrea have developed indigenous skills that help them mitigate the effects of unpredictable environmental conditions. They practice range management techniques as a way of saving forage for critical periods. Enforced by the local power of leadership, the pastoral communities have also set rules for regulating herd movements and for conflict resolutions”
(pp. 181, Hahsaye, 2002).

Identifying the Opportunities





What are the Opportunities?

- **Identify low cost, low risk opportunities**
- **Participatory based approach essential**
- **Engage farmers in adaptation of techniques**
- **Recognise existing indigenous knowledge**
- **Conservation farming systems imperative**
 - Crop establishment
 - Improved crop and plant species
 - Address communal grazing systems >

No till systems for Eritrea





The way forward

- **Identify and develop low-cost, low risk, high impact conservation farming practices**
- **Utilise and strengthen existing participatory based networks at the village level**
- **Link research and extension to communities, from Government, NGO's and others**
- **Ensure adequate resourcing for development of the practices**
- **Encourage, build and support Eritrean research, development, extension and education sectors** >

Indian Agricultural Systems





Indian Agricultural systems

- **Focus on the rice-wheat cropping system of northern India, States of Haryana and The Punjab**

Characteristics;

Intensive agricultural production, primarily rice-wheat, but also cotton-wheat, sugar cane-wheat and others

Yields have tended to plateau in recent years

Fear of climate change relating to hot conditions at grain maturity

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Sustainability Issues

- **Reliance upon agricultural inputs**
- **Herbicide resistance *phalaris minor***
- **Nitrate leaching into groundwater reserves**
- **Stubble residues burnt prior to crop establishment**
- **Excessive cultivation**
- **Small farm size, pressures to produce income**
- **Declining ground water reserves**
- **Loss of agricultural land to population increases**
- **Limited price premium in the market place for quality grain**

On-farm Participatory Approaches





Enhancing adoption in the Rice- Wheat system

- **Adoption of ZT seeding systems across northern India has been enhanced through on-farm participatory approaches**
- **Researchers, extension professionals and agribusiness working in partnership with farmers**
- **Active engagement and participation has been critical to the successful adoption**

Developing Participatory Approaches for Iraqi Agriculture



On April 26th and 27th 2008, over 1,500 Iraqi farmers attended the First Annual Al Mada'in Agriculture Technology Exposition held in Al Wahdah, a town approximately 40 miles southeast of Baghdad. The farmers came from all areas of the Qada (district) to learn about modern agricultural technologies and practices that improve farm productivity



Developing a Participatory Approach for the Iraq project

- Farmers need to be engaged, working with local extension personnel
- Opportunity to involve farmers in the local field trials and demonstrations, several field days through the growing season
- Seek feedback and opinions from them, in relation to current farming practices, and opportunities to improve their system



Some Considerations

- Requires communication & engagement, with both the extension personnel, and the farmers
- Requires a planned approach to achieve this
- Activities need to be planned, with some structure and flexibility
- Need to understand farmer constraints and issues to adoption, and address these as part of a farming systems approach
- Involve farmers in the research and demonstration agenda



Summary

- Participatory Extension systems that are farmer driven are critical to the development of improved farming systems
- All farmers behave in a similar fashion, no matter where they live or farm
- Learning by doing, comparing and challenging one another is critical to successful adoption
- Practical approaches lead to practical solutions
- These principles apply equally to Iraqi agriculture, and are critical to the successful transfer and adoption of new technologies



THANK YOU!