

Using SWM to transform Small Scale Irrigation in Southern Africa

Smart Water Management Webinar

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Introduction

- Small scale Irrigation has significant potential for improving prosperity and food security in developing countries; however:
 - Most irrigation project has failed due to poor financial performance, lack of maintenance, focus on subsistence farming and low productivity.
 - Hence in the 1980s and 90s donors reluctant to invest
 - This changed in the mid 2000's and significant new investment is foreseen in Africa at a much higher rate than elsewhere
 - How to prevent a repeat of past failures?
 - A change of mindset among farmers, leaders and politicians are needed: From subsistence to a business model
 - Integrate farmers into the value chain
 - Using Smart water Management Technologies and Institutions

The ACIAR Project: the two pronged approach

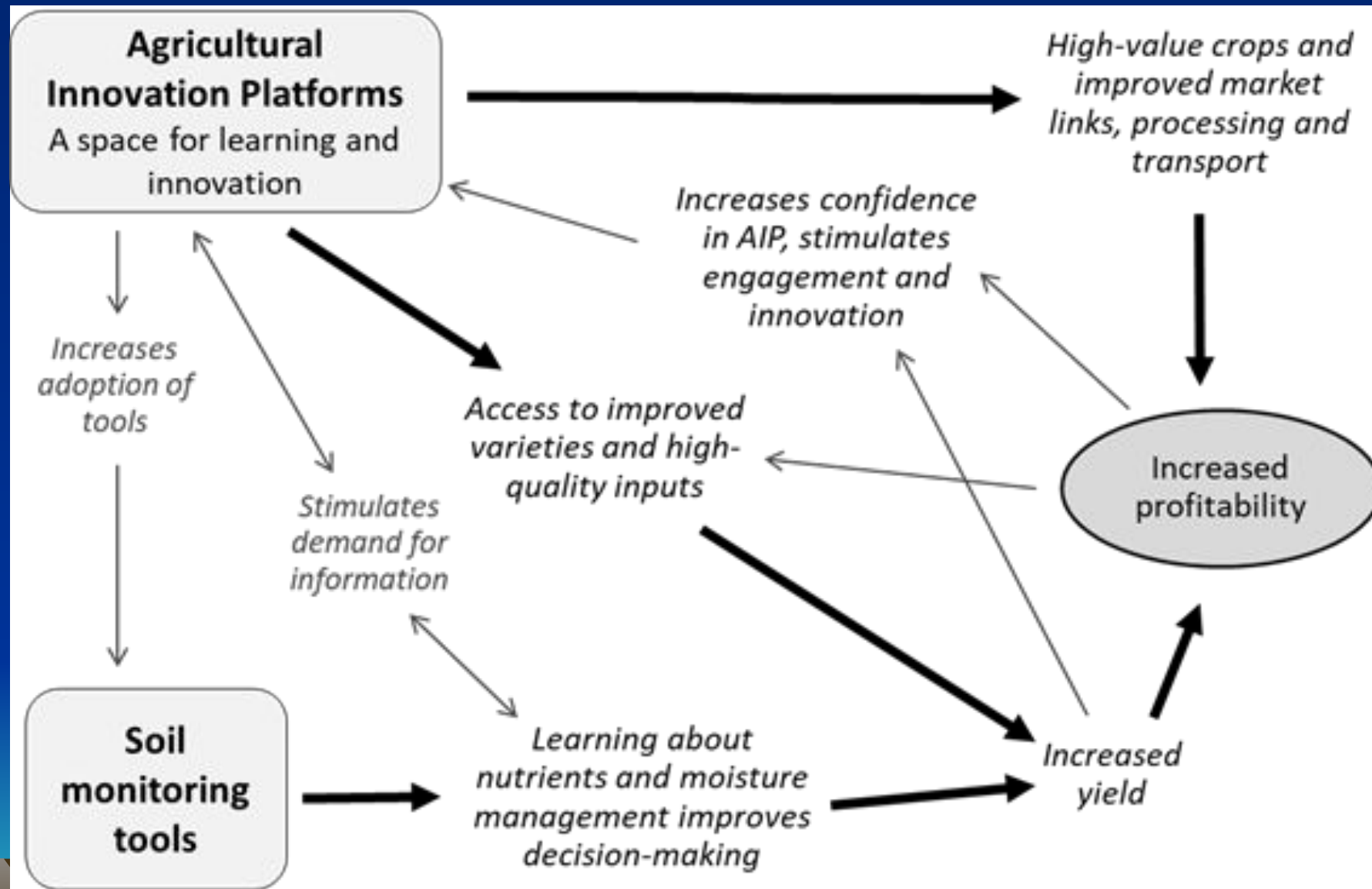


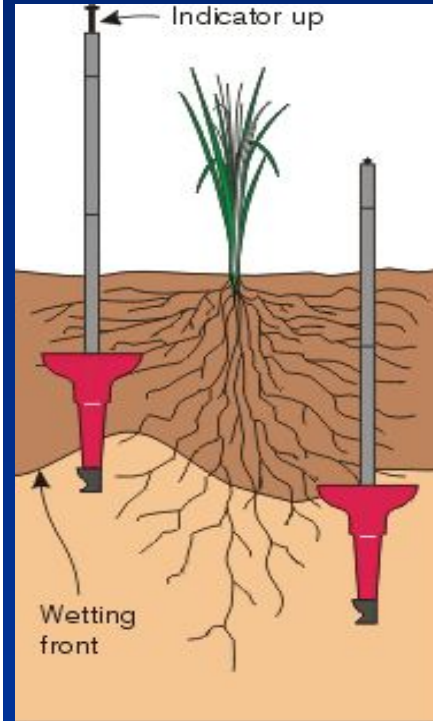
Figure 2 How the two-pronged approach influences profitability (adapted from Bjornlund et al., 2018)

AIPs working on removing barriers

- Combine all actors in the value chain to explore opportunities for the farmers in the local market context
- Goes through status quo and visioning exercise
- How do we achieve vision?
- What are the barriers? Barriers and their impact on farmers lives becomes shared and publicly known
- How do we overcome them?
- Who can implement the actions?
- Poor water management one of them – tools the solution



The Full Stop Wetting Front Detector (WFD)

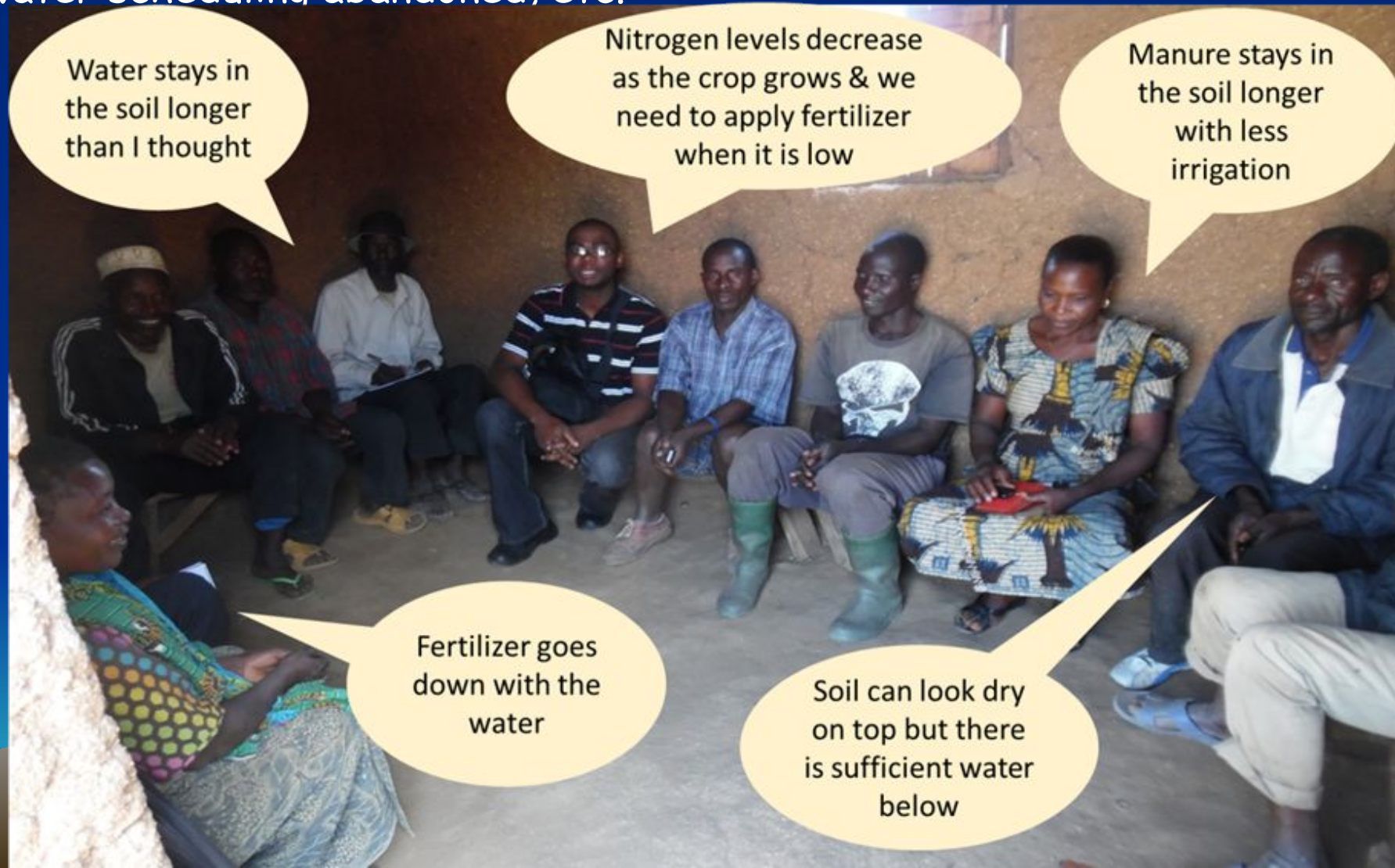


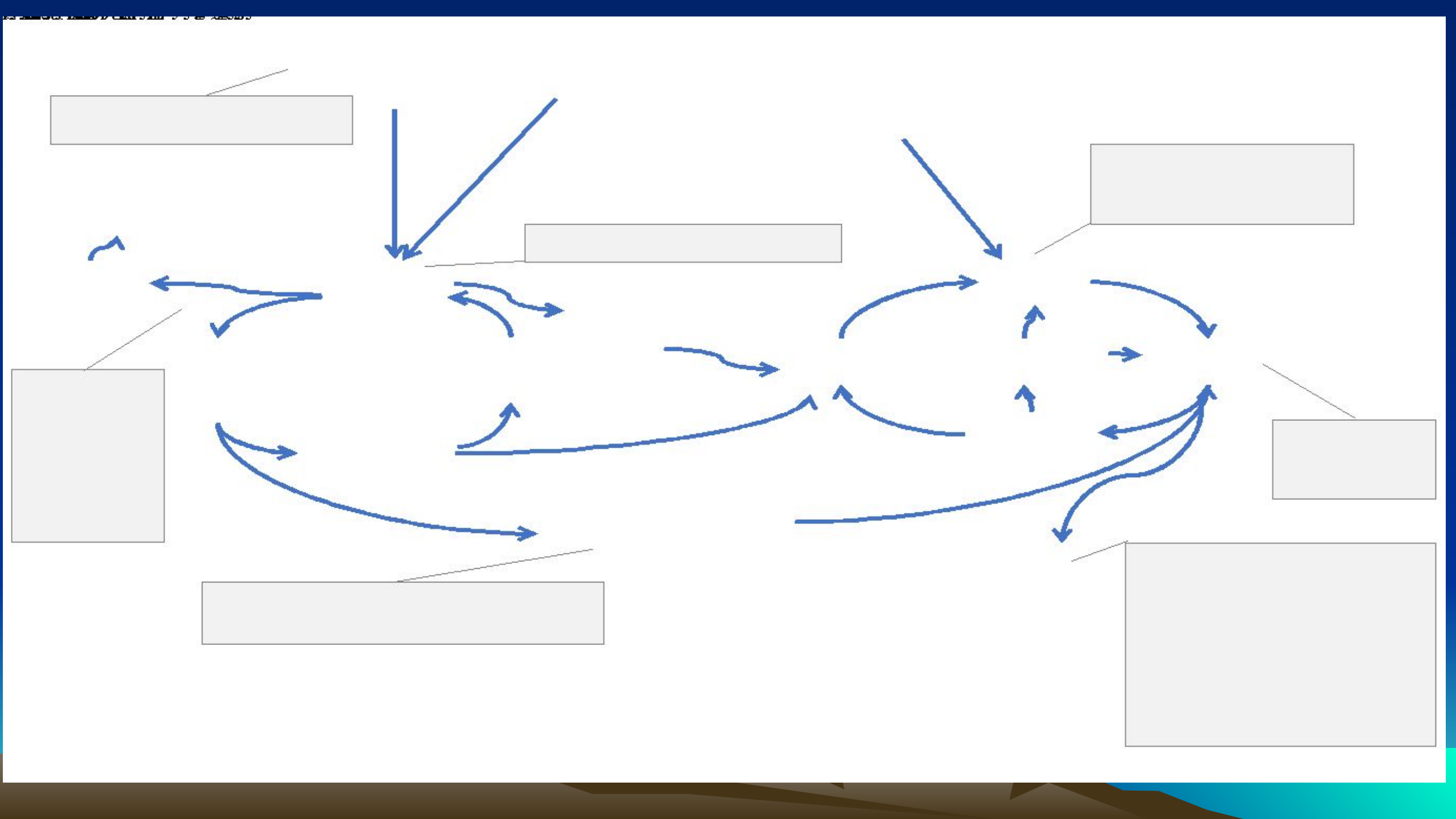
- Shows how deep water has infiltrated into the soil
- Collects leachate for solute monitoring

Chameleon- Soil moisture measuring Tools



Better understanding of complex scientific phenomena: AIP organized focus groups to facilitate learning; workshops to train in gross margin, test plots to demonstrate tools, soil test to facilitate learning and better fertilizer use, quality seed and other input, high value crops, connected to output and input markets; resolved conflict over water bill, got cropping calendar and fixed water scheduling abandoned, etc.





Conclusion

- Cheap and easy to use soil moisture and nutrient measuring devices and the AIP have increased farmer learning and resulted in
 - Fewer and shorter irrigation events, using fewer syphons - Less over watering
 - Time and fertiliser saving
 - Increased crop yield and gross-margins
 - Improved food security, nutrition, education and prosperity
 - Reduced conflict, increased willingness to participate in collective action
- The two pronged approach has changed the mindset of
 - Farmers from subsistence to 'we are now in business'
 - Scheme management committee: rigid water scheduling abandoned
 - Policy makers: abandoned the focus on staple crops: Director of irrigation: I don't care what the farmers grow as long as they make money
 - Cropping calendar put on the wall in 1960s has been taken down