

Research Application Summary

**Strengthening capacity for effective smallholder farmers support through university,
research and government partnership**

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Abstract

There is general consensus that the linear prescriptive model of technology generation and transfer from researchers to farmers often through extension has failed to deliver expected outcomes. Past approaches to agricultural research and development, the “linear model” and subsequent models had a design flaw in focussing on the supply of new knowledge from research to farmers; rather than providing a mechanism for nurturing the innovative capacity of multi-stakeholders to address recurrent production challenges in complex farming systems. These approaches tend to be sectorial and fragmented with little or no involvement of relevant stakeholders. The Agricultural Research Council (ARC) partnered with the Universities of Limpopo (UL), Venda (Univern) and Fort Hare (UFH) and applied International Centre for Development Oriented Research in Agriculture-ICRA’s Integrated Agricultural Research for Development (IAR4D) approach to enhance the impacts of their research and thus stimulate the agricultural production performance of the rural communities they serve. This presented an opportunity to address complex issues that require participation and contributions from a range of stakeholders. The capacity to conduct participatory action research has been gained through actual exposure of IAR4D teams to real-world challenges and by engaging in processes of interactive learning and collective action. The ARD teams were composed of staff of universities, ARC, government, and students as there is realisation that both staff and students lack competencies to effectively make effective changes required for a more inclusive economic development and transformation in South Africa. Success was particularly realized in exposing trained staff and students to a different way of doing research that provides opportunity for better engagement with communities and other relevant stakeholders. However, there has been low ‘adoption rate’ of the ARD processes. as none of the partner universities structurally and wholly integrated the approach in their research agenda to date. Whilst there are pockets of adoption, structural change is yet to be seen at UL, UFH and UniVen.

Key words: Agricultural research for development, innovation system, interdisciplinary research, partnerships, stakeholders

Résumé

Il existe un consensus général selon lequel le modèle normatif linéaire de génération et de transfert de technologie des chercheurs aux agriculteurs à travers la vulgarisation n’a

pas réussi à donner les résultats escomptés. Les anciennes approches de recherche et du développement agricole, le «modèle linéaire» et les modèles ultérieurs avaient un défaut de conception en mettant plus l'accent sur l'apport de nouvelles connaissances de recherche aux agriculteurs; au lieu de fournir un mécanisme pour nourrir la capacité d'innovation des acteurs à relever les défis de production récurrents dans les systèmes agricoles complexes. Ces approches ont tendance à être sectorielles et fragmentées avec peu ou pas d'implication des acteurs concernés. Le Conseil pour la Recherche Agricole (ARC) s'est associé aux universités Limpopo (UL), Venda (Univern) et Fort Hare (UFH) pour appliquer une approche Intégrée de Recherche Agricole pour le Développement (IAR4D) du Centre International pour la Recherche Agricole Orientée vers le Développement afin d'accroître les impacts de leurs recherches et par ricochet stimuler la performance de la production agricole des communautés rurales qu'elles desservent. Ceci a été une occasion pour résoudre des problèmes complexes qui nécessitent la participation et les contributions d'un nombre d'acteurs. La capacité pour mener une recherche-action participative a été acquise à travers l'exposition réelle des équipes d'IAR4D aux défis du monde réel et l'engagement dans des processus d'apprentissage interactifs et d'actions collectives. Les équipes de l'ARD étaient composées de membres du personnel des universités, de l'ARC, du gouvernement et des étudiants, en ce sens que l'on aperçoit que le personnel et les étudiants n'ont pas de compétences pour apporter de façon efficace les changements nécessaires à un développement et une transformation économique plus inclusifs en Afrique du Sud. Le succès a été particulièrement réalisé en exposant le personnel et les étudiants à une autre façon de faire des recherches qui offrent l'opportunité d'un meilleur engagement auprès des communautés et d'autres acteurs concernées. Cependant, il y a eu un faible «taux d'adoption» des processus ARD. Étant donné qu'à ce jour, aucune des universités partenaires n'a totalement intégré l'approche dans leur programme de recherche. Bien qu'il y ait des poches d'adoption, les changements structurels n'ont pas encore été observés à UL, UFH et UniVen.

Mots clés: Recherche agricole pour le développement, système d'innovation, recherche interdisciplinaire, partenariats, acteurs

Background

The conventional technology generation and transfer approaches used by many research organizations tend to be sectorial and fragmented with little or no involvement of relevant stakeholders. A number of interactive research and development (R&D) 'models' that seek to improve the performance of the rural economy through increased agricultural production have evolved over the past years (Klerkx *et al.*, 2012). These models include among others: Agricultural Knowledge and Information System (AKIS), Rapid Rural Appraisal (RRA), which later evolved as Participatory Rural Appraisal (PRA), and Collective Agricultural Innovation Systems. The Agricultural Research Council (ARC) partnered with the Universities of Limpopo, Venda and Fort Hare and applied the integrated Agricultural Research for Development (ARD) approach of the International Centre for Development-Oriented Research in Agriculture (ICRA) to enhance the impacts of their research and

thus stimulate the agricultural production performance of the rural communities they serve. The emergence of ARD (later referred to as IAR4D) presented an opportunity to address complex rural issues that required participation and contributions from a range of stakeholders with direct or indirect interest. Uppermost in ARD is the strengthening of capacity for facilitative engagement with the rural communities being served. The skills that were sought by the partners included interdisciplinary research, partnering, stakeholder engagement, and facilitation, amongst others.

Rationale for the Adoption of ARD. The ARD is a research process that integrates a range of participatory approaches including PRA to facilitate multi-stakeholder engagement in the exploration of ‘real world’ research and development issues, employing participatory action research. The capacity to conduct action research has been gained through actual exposure of ARD teams (made up of researchers, lecturers, students and extension professionals) to ‘felt challenges’ and by engaging in processes of interactive learning and collective action with stakeholders concerned. These inter-institutional and interdisciplinary ARD teams were formed through the realisation that both staff and students lack competencies to effectively bring changes required for a more inclusive economic development and transformation in South Africa (Spielman *et al.*, 2009). In this case, it was found that, amongst many benefits, ARD managed to:

- Facilitate joint exploration of challenges to optimal production and productivity, with each stakeholder sharing their perception of problems and solutions,
- Promote teamwork and skills for inter-disciplinary research and specifically integrating the agro-ecological, economic and social perspective in the research studies conducted,
- Prompt the ARD teams to approach rural development from the anticipated end in mind, e.g. robust value chain arrangement with well-established market chains,
- Facilitate the adoption of systems thinking to ensure full exploration of all elements of the issue for ‘spot-on’ recommendations of envisaged improvements.

Key considerations in the implementation ARD

The operationalization of ARD revolves around the successful establishment and operation of a multi-stakeholder problem-solving forum referred to as an Agricultural Innovation Platform (AIP). An AIP is a tool for bringing together multiple stakeholders for visioning, planning and implementing or application of new ideas, practices, services which arise through interaction, creativity, insight, and empowerment (Hall, 2007).

Strengthening the linkages and interaction between ARD actors has been considered as key to improved efficiency and effectiveness of ARD efforts aimed at raising the level of economic performance of rural economies through increased productivity. The ARD model was tested through 10 field studies conducted in Limpopo by the ARD teams and the application of the approach showed a mix of successes and challenges that played out at three different levels. (Table 1).

Whilst success was particularly realized in exposing trained R&D staff and students to a different way of doing research (for better engagement with communities and other

relevant stakeholders) there has been a low ‘adoption rate’ of the ARD processes amongst the main partners, the three universities and ARC. A number of key factors responsible for this low uptake were;

a. Lack of an integrated platform for the identification of research priorities based on local issues and challenges. This is largely because there has not been a successful establishment and formalised operation of a multi-stakeholder problem-solving Agricultural Innovation Platform.

b. There is poor or no mechanisms for integrating the lessons learnt from ‘ARD’ research into curricula. This results in limited sharing of knowledge especially with students who are expected to support agricultural production in the future. The curricula thus remain ineffectual at supporting knowledge generation, uptake and innovation.

c. There is generally poor monitoring and evaluation of the outcomes of research. The students who partake in these ARD research often have own academic research to prioritize. This then limit the envisaged follow-up through action and integration of lessons learnt in curricula. The wider community and stakeholders fail to realize the intended benefit of ‘an interactive’ research, that is, improvement in farming practices/productivity (in the absence of a facilitator), resulting in disillusion over universities to help solve encountered problems.

Table 1. Success and challenges encountered during implementation of agricultural research for development in Limpopo, South Africa

Individual Capacity Level	Research Programme Level	Institutional Level
Successes		
Trained staff and students exposed to a different way of doing research	Participatory research (ARD) processes successfully applied in field studies.	Adoption of needs relevant research in Limpopo
Gaining a range of soft skills, teamwork, presentation, communication.	Some recommendations from ARD field studies adopted by stakeholders, e.g. revision of blanket commercialization strategy in Blouberg	Generation, uptake and innovation in the way research is conducted by the partners.
More aligned skills set to rural stakeholder situations and contexts	A number of Masters and PhD graduations	Stakeholder relationships built in the regions of engagement.
Failures		
Skills ‘drain’ and lost ARD capacity by the universities to private sector and municipalities	Non- alignment of research priorities of the Universities with the broader agricultural development agenda at regional and national government levels.	Low ‘adoption rate’ of the ARD processes
Lack of mechanisms for integrating the lessons learnt from ‘ARD’ research into curricula.	General lack of integrated research agenda in the two provinces.	The curricula remaining ineffectual, not capitalising on knowledge gained by ARD alumni
Potential hitch riding of individuals on high performing team members	Limited capacity to effectively mentor research teams in some cases	A generally poor monitoring and evaluation of the outcomes of research

Lessons learned

Over the period of implementation and interactions within the ARD framework and processes, the following are the learnings that can be gleaned for sharing:

- a. The critical need to change the reward systems (e.g. promotion) in the University system based on publication. The current reward system currently promotes 'individual' efforts and lacks incentives for stimulating participatory and collaborative research work.
- b. The traditional teaching and learning methods are not conducive for successful uptake of ARD; large student numbers are rather counter in nature. A shift to problem-based or student centred learning will give impetus to 'easier' adoption of ARD. This type of teaching and learning exposes students to real world tasks or assignments which can potentially lay a foundation for effective link between teaching/learning and action research.
- c. Most of the research work conducted by University staff is externally funded and largely discipline specific with limited participatory scope. This is therefore a need for Universities to increase internally funded research that is streamlined to specifically address societal needs.
- d. University leadership needs to play a greater role in institutionalization of ARD processes. Most of the uptake in ARD processes has largely been limited to individuals that have participated in the ARD training. This is attributable to the low level of ARD institutionalization.

Recommendations and proposed way forward

On the basis of the successes and failures and the lessons learnt, the following are recommended as way forward in embedding ARD processes for improving the economic performance of the rural economy:

- a. Continue building 'critical mass in ARD beyond the project lifeline through in-house training workshops.
- b. Exploration of possibilities of introducing ARD in the curriculum of the Postgraduate Degree Programmes in Agriculture.
- c. Stronger networks should be encouraged by strengthening existing platforms and organising fora to raise awareness and change attitudes of decision-makers.
- d. Promoting formation of strong and 'ARD enlightened farmer groups' that seek an increase in participatory agricultural research approaches and better able to lobby for deserved services.

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