

Two heads are better than one: Strengthening partnerships in research and higher education

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Abstract

Perhaps more than ever our survival as a species is dependent on our collective problem solving ability. Our ability to thrive requires creativity and innovation to seize some amazing opportunities. In both cases - solving problems and seizing opportunities - two heads are better than one. There is empirical data to support this. In both journals, *Nature* and *Science*, there is a positive correlation between multiple authorship (a proxy measure for collaboration) and impact of the research. If we are to truly strengthen partnerships in research and higher education it is imperative to understand what is effective collaboration and how it can be nurtured within and between institutions and to what end(s). Murdoch University, an international research university based in Western Australia, has emerged as an institution with a hub of interdisciplinary collaborative activity committed to innovation and quality higher education at a world-leading level. Our successful strategic international partnerships bring together the best minds and enable the sharing and dissemination of knowledge, information, and expertise. Through some specific examples including a work-in-progress case study on the nexus between mining and agriculture in rural and regional Africa under examination by members of Murdoch's Africa Research Group, we will examine the ingredients necessary for producing high impact research, and how partnerships forged out of mutual respect and a genuine desire to achieve results can create a lasting legacy for communities and make a material difference in the quality of the lives of people. The lessons learned may be useful for others who desire to strengthen partnerships in research and higher education.

Key words: Africa, Australia, collaboration, higher education, interdisciplinarity, partnerships, research

Résumé

Peut-être plus que jamais, notre survie en tant qu'espèce dépend de notre capacité de résolution de problème collective. Notre capacité à prospérer exige de la créativité et de l'innovation de saisir des opportunités incroyables. Dans les deux cas, la résolution de problèmes et de saisir les occasions - deux têtes valent mieux qu'une. Il existe des données empiriques à l'appui. Dans les deux revues, *Nature* et *Science*, il ya une corrélation positive entre la paternité multiple (une mesure de proxy pour collaboration) et l'impact de la recherche. Si nous voulons vraiment renforcer les partenariats dans la recherche et l'enseignement supérieur, il est impératif de comprendre ce qui est une collaboration efficace et comment

elle peut être nourri au sein et entre les institutions et à quelle fin (s). L'Université de Murdoch, une université de recherche internationale basée en Australie occidentale, est devenue une institution avec un centre d'activités de collaboration interdisciplinaire commis à l'innovation et à l'enseignement supérieur de qualité au niveau mondial de premier plan. Nos partenariats internationaux stratégiques réunir les meilleurs esprits et permettent le partage et la diffusion de connaissances, d'informations et d'expertise. A travers quelques exemples spécifiques, y compris une étude de cas des travaux en cours sur le lien entre l'exploitation minière et l'agriculture en Afrique rurale et régionale en cours d'examen par les membres du Groupe Afrique de recherche Murdoch, nous allons examiner les ingrédients nécessaires à la production de recherche à fort impact, et comment les partenariats forgés à partir d'un respect mutuel et une réelle volonté de parvenir à des résultats, peuvent créer un héritage durable pour les communautés et de faire une différence significative dans la qualité de la vie des gens. Les leçons apprises peuvent être utiles pour d'autres qui cherchent à renforcer les partenariats dans la recherche et l'enseignement supérieur.

Mots clés: Afrique, Australie, collaboration, l'enseignement supérieur, l'interdisciplinarité, les partenariats, la recherche

Introduction

The Africa Research Group at Murdoch University is truly an interdisciplinary group, comprised of researchers from very different disciplines, yet come together to focus on problems and opportunities within the continental African region. Within a larger context of the movement of interdisciplinary research, our approach can be effectively characterised by the following quotes from the foreword of the Oxford Handbook of Interdisciplinarity... "Interdisciplinarity is simply a means. But to what end? Pragmatically put, toward the ends of greater insight and greater success at problem solving. More fundamentally, however, interdisciplinarity is a means toward the end of preserving or achieving the good life in a complex, global, rapidly innovating society."... "First, it provides a picture of current efforts of knowledge production that cross or bridge disciplinary boundaries ('interdisciplinarity'), and of the growing effort to make knowledge products more pertinent to non-academic actors ('transdisciplinarity')" (Frodeman *et al.*, 2010).

Mirroring this interdisciplinary approach with higher education and research in the rural sector yields an effective means to tackle complex problems, including enhancing agricultural productivity in non-industrialised regions. As an example, a farmers' ability to adopt new technologies and farm inputs requires long-term investment in upstream and downstream supply chains, including infrastructure, research, extension investments, and also an attractive input and farm gate prices (Jayne *et al.*, 2010). Yet, at present small-scale farmer production, capacity building, extension services, and marketing activities remain fragmented and under-emphasised in current development and research agendas (Jayne *et al.*, 2002; Lynd and Woods, 2011; McHenry *et al.*, 2012). Fundamentally, a strong market demand is needed to underpin increased agricultural sector investment towards commercial production (Woodhouse, 2009). The mixed results of past approaches to support agricultural development now requires a more detailed understanding of locally appropriate options for public and private

collaborations to sustain adoption and wider development objectives beyond traditional disciplines and economic sectors (Speelman *et al.*, 2010).

It is now clear that a wider scope of rural development-related research and information outside of traditional agricultural supply chains is required to avoid implementing inappropriate strategies and systems (Werblow and Williams, 1998; McHenry and Cakir, 2013). As an example, while agriculture accounts for 70% of African countries' total employment, with 65% of whom are women (Opara, 2011), women often remain excluded from consultation and decision-making. Widening the level of stakeholder engagement may involve active processes of providing new information, consultation, direct involvement, collaborations, and empowerment, and depend on the specific areas of risks and opportunities involved (Department of Industry Tourism and Resources and 2009). Research underway at Murdoch University is expanding the traditional research and higher education scope in the agricultural development space into creative new approaches within the supply chain, particularly between sectors that are not traditionally engaged with one another, yet share common needs, synergies, and opportunities within the rural geographical region. These partnerships may include mining companies, smallholder agricultural producers, agricultural service suppliers, social venture capital partnering organisations, and regional food companies and exporters (McHenry, 2011; McHenry *et al.*, 2013). The wider opportunities of the development of a modern commercial agricultural service sector, spurred by the needs of the mining industry and associated developments that stimulate demand for agricultural higher education and training through generating employment in the sector. The research is scoping the potential for the parallel opportunities for the inclusion of appropriate local modern inputs, energy, machinery, implements, nitrogenous-fixing plant species, and fertilisers (all on a non-subsidised commercial basis) to improve productivity of small-scale farm production, including the incorporation of local tertiary and vocational training (TVET) sector. The core research methodology involves a multi-stakeholder partnering process for analysing the value chain over time (Vermeulen *et al.*, 2008).

Conclusion

The nexus between mining and agriculture in rural and regional Africa has the potential for high impact research, and partnerships forged out of mutual respect and a genuine desire to achieve results can create a material difference in people's lives. We present but one example how an interdisciplinary approach based on a sustained corporate social responsibility element for the life of a mining development may facilitate mutually beneficial agricultural production to meet procurement standards, and create confidence in the supply chain to enable local producers to participate in market opportunities. Tackling such complex problems is a challenge to existing higher education and research institutional practices (Cakir and McHenry, 2013). Yet, with a suitable level of interdisciplinarity, appropriately orientated higher education and research institutions have the ability to engage in effective multi-way partnerships between various commercial entities and civil society outside of the academic sphere to truly achieve transdisciplinarity.

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