



Grounding the helicopters

Ken E. Giller

Plant Production Systems, Wageningen University, The Netherlands



ARTICLE INFO

Handling Editor: Jan Willem Van Groenigen

Minasny et al. (2020) raise an issue concerning the ethics of scientific research and publication that has implications far beyond the issue of authorship. It is a topic to which I am particularly sensitive given that I have devoted virtually my whole career to research on smallholder agriculture in the tropics. In particular, Minasny et al. highlight the unbalanced power relationships when it comes to research collaboration and publication which stimulates me to reflect on what can we do to reduce or avoid such bias.

During my service as Professor of Soil Science at the University of Zimbabwe we were frequently faced with international researchers appearing out of the blue to announce “we’ve written this proposal for submission and would like to add your name...” or “we’ve secured research funding and we’d like to collaborate...” or even worse “we’ve been funded to assist you in revising your teaching curriculum!” Often the topics were of dubious relevance or interest to staff in my department, but the dearth of funding within our university nevertheless led to collaboration. In response to these experiences we developed our own research strategy and priorities. When approached subsequently for collaboration we insisted proposals should be adapted to fit our strategy and not *vice versa*.

Concern about the quality and equality of partnerships behind proposals for large integrated research programmes led the Dutch research funding agency, NWO-WOTRO Science for Global Development to take action. I was member of the NWO-WOTRO Board at the time and we introduced a two-stage grant making process where the successful pre-proposals had to organise a ‘compulsory workshop’ together with the collaborators and a broader range of stakeholders in the country where the research was to be conducted. Each team with a successful pre-proposal is awarded €15,000 to organise the workshop (which is then deducted from the grant for the successful proposals). At this stage the proposal has a 50% chance of funding at this stage. In my personal experience as an applicant since I left the Board I see both pros and cons of this approach. On the positive side, much closer stakeholder engagement is facilitated leading to better articulation of the problem statement and priorities for research. As the workshop is run jointly by

the research team, often with the local researchers in the leading role, it leads to closer collaboration once the grant is awarded. On the downside, half of the proposal writing teams and their stakeholders face the disappointment of failing to be funded. In my experience, from both winning and losing proposals, the learning provided by such workshops outweighs the disadvantages. Often other opportunities are later found to pursue the research agenda developed.

Creating equal partnerships and recognising contributions is an important principle for NWO-WOTRO. They sometimes organise ‘match-making’ workshops to assist scientists to establish collaborations. All project partners have to sign consortium agreements that cover issues related to intellectual property and publication of results generated. This is no doubt ‘work in progress’ as we can always improve on our approaches and procedures, but their rules may be a source of inspiration for others.

When approached by the Bill & Melinda Gates Foundation to develop a project to reap the benefits of biological nitrogen fixation by the legume-rhizobium symbiosis, I drew together a team of African scientists to collaborate in identifying priorities and designing the programme. We ran a series of consultations including two large workshops, one at an international conference of the African Association of Biological Nitrogen Fixation in Hammamet, Tunisia in 2008 and one in Mombasa, Kenya in 2009 to ensure a broad constituency of African experts agreed on priorities before the project was submitted for funding (Giller et al., 2013). The resulting project N2Africa (www.N2Africa.org) subsequently ran for ten years in eleven countries involving a wide range of scientists and other stakeholders. Obviously not all research consortia have the luxury of funding for a planning period when developing a proposal, but this should be encouraged where possible.

Above I share examples of what I consider to be good practice in developing collaborations, but many issues remain. One area of particular concern to me comes from large-scale global or continental studies where there appears to be virtually no field work or local knowledge to back up the conclusions. Some of the most highly cited papers

DOI of original article: <https://doi.org/10.1016/j.geoderma.2020.114299>

<https://doi.org/10.1016/j.geoderma.2020.114302>

Available online 13 May 2020

0016-7061/ © 2020 The Author(s). Published by Elsevier B.V. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

have little grounding when it comes to checking local numbers. For example, [Foley et al. \(2011\)](#)¹ grossly underestimate potential and achievable crop yields across Africa compared with those observed in farmers' fields and on experimental stations. Their overall conclusions perhaps hold but the actual numbers are far from the mark in terms of accuracy. Collaboration with at least some authors from countries in the South might have avoided these errors.

A very different example is a recent paper produces an alarming account of the advent of roads resulting on impacts on deforestation in the Congo Basin ([Kleinschroth et al., 2019](#)). Whilst I share the authors concern for indiscriminate logging and forest loss I was surprised not to find any consideration of the complete lack of access to transport and livelihood opportunities for local people. Here again involvement of local scientists might have avoided such a one-sided view of the issues.

My final concern is on who decides on the research agenda concerning issues of agricultural development. So often calls for proposals from the European Union for collaborative research in the less-developed countries seems to follow issues deemed topical in Europe. Surely the tables should be turned so as to follow issues raised in the 'target' countries rather than the latest fashion in science?

I thank Minasny and colleagues for highlighting current biases in

our research and publication systems which need much further debate. I have to admit that the publication concerns are not addressed by my university graduate school's guidelines for authorship – something I have already acted upon!

References

- Foley, J.A., Ramankutty, N., Brauman, K.A., Cassidy, E.S., Gerber, J.S., Johnston, M., Mueller, N.D., O'Connell, C., Ray, D.K., West, P.C., Balzer, C., Bennett, E.M., Carpenter, S.R., Hill, J., Monfreda, C., Polasky, S., Rockström, J., Sheehan, J., Siebert, S., Tilman, D., Zaks, D.P.M., 2011. Solutions for a cultivated planet. *Nature* 478, 337–342.
- Giller, K.E., Franke, A.C., Abaidoo, R., Bajjukya, F., Bala, A., Boahen, S., Dashiell, K., Kantengwa, S., Sanginga, J.-M., Sanginga, N., Simmons, A.J., Turner, A., de Wolf, J., Woome, P., Vanlauwe, B., 2013. N2Africa: putting nitrogen fixation to work for smallholder farmers in Africa. In: Vanlauwe, B., van Asten, P.J.A., Blomme, G. (Eds.), *Agro-ecological Intensification of Agricultural Systems in the African Highlands*. Routledge, London, pp. 156–174.
- Kleinschroth, F., Laporte, N., Laurance, W.F., Goetz, S.J., Ghazoul, J., 2019. Road expansion and persistence in forests of the Congo Basin. *Nat. Sustainability*. <https://doi.org/10.1038/s41893-019-0310-6>.
- Minasny, B., Fiantis, D., Mulyanto, B., Sulaeman, Y., Widyatmanti, W., 2020. Global soil science research collaboration in the 21st Century: Time to end helicopter research. *Geoderma*. <https://doi.org/10.1016/j.geoderma.2020.114299>. In this issue.

¹ Cited 2586 times, Web of Science, 03/03/2020.