Putting co-production into practice – the value of cross-learning

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In February this year I travelled to Rupendehi, Nepal with Met Office International Climate Services Scientist Rebecca Parfitt to meet with colleagues from the Department of Hydrology and Meteorology (DHM) and the Regional Integrated Multi-Hazard Early Warning System (RIMES). These organisations are partners of the Met Office in the Asia Regional Resilience to a Changing Climate (ARRCC) programme, funded by UK aid, and my involvement is within the Strengthening Climate Information Partnerships South Asia (SCIPSA) project.

The purpose of the visit was to meet a broad range of information providers and users to help inform the development of a customised Decision Support System (DSS) that will provide an array of agro-meteorological advisories to support farmers in two districts of Nepal's Province 5. While there, I also had the opportunity to reflect on the similarities and differences in co-production practices I have encountered from working on the Weather and Climate Information Services for Africa (WISER) programme in East Africa.

Background to the co-production approach in ARRCC

So, what does co-production mean in this context? As a broad definition, the co-production process is guided by the principle of *'bringing together different knowledge sources and experiences to jointly develop new and combined knowledge which is better able to support specific decision-making contexts'*[1]. WISER programme experience suggests that this occurs on a spectrum from consultative co-production, which has a pre-defined goal, to immersive co-production which allows for much greater flexibility in terms of the desired outcome[2]. The approach adopted in Nepal leant towards a consultative methodology as the project already had a strong idea regarding the proposed output (the DSS) but needed to pull together different sources of expertise and information to inform the design of the service. While the exact design of the DSS is still being worked on, it will draw heavily on the experience RIMES gained in developing the SESAME DSS web application (an agricultural advisory system for early warning and day-to-day crop management) and supporting farmers in its interpretation and use. Through a series of meetings and workshops the hope was therefore to:

i) understand the existing requirements for weather and climate information that can support farmers in the pilot locations;
ii) establish links between DHM and the municipal institutions which will support the roll-out of the DSS; and
iii) determine the scope of the DSS in terms of the information that needs to be delivered and how it should be communicated.

[1] Kniveton, D., Visman, E., Daron, J., Mead, N., Venton, R. and Leathes, B. (2016) 'A practical guide on how weather and climate information can support livelihood and local government decision making: An example from the Adaptation Consortium in Kenya'. Working draft, Exeter: Met Office.

[2] Carter, S., Steynor, A., Vincent, K., Visman, E., and Waagsaether, K. (2019) 'Co-production of African weather and climate services'. Manual, Cape Town: Future Climate for Africa and Weather and Climate Information Services for Africa (https://futureclimateafrica.org/coproduction-manual)

What did we learn?

The consultations with farmers were hugely impressive in terms of the levels of engagement from those attending, and the insights that were gained from these conversations. It is clear that there is a large unmet need to receive a forecasting service, with a strong desire to have access to information that will help them to select suitable seed varieties, as well as plan key activities around sowing, cropping and irrigation. This need is not only informed by a wish to reduce input costs but also comes after losses in the Terai region through rainfall and waterlogged conditions this year, and the drought experienced last year. This has been compounded by incidences of blight and leaf rust, and the spread of aphids and armyworm, the occurrence of which are all strongly linked to climatic conditions.

While there was a mixture of opinions regarding the best way to communicate forecasts, with SMS and radio being favoured options, it was interesting to note how the older farmers recognised that the younger generation would be most comfortable and adept at utilising new sources of advice and information and that they could use them to help interpret the forecasts, particularly amongst those who had low literacy.

Further discussions were also held with a number of the principal institutions responsible for the generation and communication of agricultural advice including the National Wheat Research Program, Ministry of Land Management, Agriculture and Cooperatives, the Agriculture Knowledge Centre, the National Agricultural Research Council, and other arms of the municipal government. Tellingly, this found that agro-advisories were being dispersed through a number of channels but little could be discovered regarding their use and efficacy. These findings were reinforced in the discussions with the farmers, none of whom reported the receipt of any such service. Therefore, while expertise and valuable information was being generated, it wasn't reaching those who most needed it, and there was no feedback mechanism to report this.

Next steps

If then a requirement for a service exists and there are the resources available to develop this, how does the project envisage developing an effective DSS? This will need to focus on three critical stages:

i) **The design of the agro-meteorological bulletins themselves –** Using as far as possible existing sources of agro-advisories and combining these with a range of forecast products generated by DHM (seasonal, sub-seasonal and weekly).

ii) **Using effective channels of dissemination –** This should not only look at the means of communication (SMS, radio etc.) but how to strengthen flows of information from national, provincial and local levels.

iii) **Capacity building –** To enhance the skills and knowledge of both district agriculture officers and farmers themselves to interpret and use the agro-meteorological bulletins.

I am now looking forward to seeing how the design of the service is undertaken and its first roll-out and use by the farmers I met.

Comparisons with WISER

Co-production at its most fundamental level requires the development of trust and a shared goal which can take time to achieve and can also be quite fragile. Under WISER, we spent a huge amount of time nurturing relationships between the NMHSs and prospective users of their services. This was sometimes in the face of historical and deep-seated skepticism of forecasts coming from any official source. Speaking to numerous farmers, fishermen, and other prospective users in East Africa I was struck by the numbers of times that I came across well-intentioned but ultimately doomed projects which had developed a new service, established a demand and ongoing need for that service, and even written a sustainability plan, only to see the service evaporate in the months following the end of the project. This was often due to a lack of 'buy-in' at senior levels of some of the organisations directly involved, who were unwilling to maintain a level of investment to sustain the service. This is something which WISER has tried to achieve more successfully for the sustainability of its work going forwards.

In Nepal, it looks as though the project is starting from a much more advanced position with it being notable how strong and fruitful the interactions were between the official bodies and the farmers groups. The key then for the success of the DSS will be to build these relationships, ensuring that each party feels sufficiently invested in its development to be willing to provide the continual level of engagement and feedback so that a cycle of improvement is ongoing.

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