

Weather Impact

Summary Open Space Workshop

The Weather Impact seminar of 22 March 2018 on weather information services for successful local African agriculture consisted of a series of plenary talks by Dutch and African experts followed by an open space workshop. This document contains a concise discussion of the knowledge and information gathered during the workshop. In an open space workshop, the participants themselves determine the subjects of discussion. First, everyone is invited to propose discussion topics and by vote the four most popular are determined. The proposers of these subjects will lead a 1-2 hour discussion, while the other participants can move freely from one discussion to the next based on interest. At the end, short presentations are given to share the discussed topics and gathered knowledge.

Open space discussion subjects

- Train farmers on implementation of released technologies
- Make information services scalable
- Combine satellite information for farm/household data to add more value
- Improve access to finance by using better data and input materials, involving large end users in the value chain

Train farmers on implementation of released technologies

One of the important questions in providing information services to African small-scale agriculture is how to reach the farmers in the most efficient and effective way. How do we get information to the farmers? And, how do we ensure the information is accepted and used? Most new data are based on sophisticated technology and therefore far away from the farmers world. Translating the data into understandable information for farmers and using the right media/tools to distribute it are vital to reach farmers effectively. The local language should be used when possible and attention should be given to the use of terminologies and/or dialects. Also, the use of simple signs and pictograms can be very useful. When the information is ready for distribution to next question is: how to get it to the farmer?

Traditional media, such as radio, flyers, and billboards, can be used for simple advertisement. Sometimes an existing network is already in place (e.g. a local agro-meteo service) that can be used to distribute data products. Otherwise, farmers schools and social events (e.g. farmer conference) are effective tools to reach large groups of farmers. Involving "champion" farmers that know how to be successful is also deemed an effective strategy.

Combining such local knowledge is deemed very important to engage in a successful provider-user relationship. This could for example be combined in a Q&A document containing good practices.

From the providers point of view, the financial aspect is also important. How do 'we' capitalize our costs, while farmers have little money? A 'no cure, no pay' mechanisms seems useful if the right partners (government, private/public partners) are involved to bridge the financial gap.

Make information services scalable

One method to make an information service sustainable is to make it scalable. If a method is developed in such a way that it can be applied to various other regions over the globe, the development costs reduce heavily while the revenue remains the same for future projects. This is currently a realistic option, as many data is available on a global grid such as satellite or weather model data.

During the discussion, possible problems with scaling were discussed and three data sources were separated: satellite observations, model data and ground-based observations from weather stations. The latter are the most direct measurements possible, but always remain point measurements making them difficult to use in scaling procedures. One solution would be to install many simple cheap weather stations to overcome such an issue. Model data has a global coverage circumventing such problems, but the resolution is relatively coarse (~10 km).

High-resolution satellite data has a combination of the above methods, as it is a high-resolution direct observation that has global coverage. However, some problems still arise. For example, even with high-resolution satellite data it is difficult to localise farming fields. The localisation of farmers depends on the on-site availability of a GPS or smart phone. Also, many plots are too small for even the highest resolution satellite data available (100x100 m) and if rotating crops are used it is difficult to compare year-to-year. In the tropics, the orbit and timing of satellite overpasses is less good than in higher latitudes regions resulting in data gaps.

Concluding, it is best to collaborate and use the three discussed methods in conjunction! All three have their clear advantages that lead to very robust and useful data products if combined. Since both satellite data and model forecast data are available on global grids, developed data products can be easily scaled to different regions.

Combine satellite information for farm/household data to add more value

The idea behind this discussion topic has two levels. The first level is for farmers to get better results from the information that is currently offered to them. In most cases this is mainly a weather forecast and a combination with information on other elements, such as seedling/harvesting advice, will likely increase their production results. A more specific example is the prediction of a possible army worm plague and what farmers can do for prevention

and were to find more information. Weather data in combination with other information makes for even more valuable data for African farmers.

The second level is to actively promote farmers to give back information to the system, such as field location, nutrient- and yield history and household information. With these kinds of information, it is for example possible to find relations between yields, weather and soil nutrients, resulting in far more farmer-specific information than before. A sensitive part about farmers providing their information is that this creates a certain data asymmetry. As farmers provide valuable data to the system they also become in some sense shareholder of the system. A solution to this would be to work with intermediate parties that represent the farmers and with whom it is easier to settle agreements on data usage.

Improve access to finance by using better data and input materials, involving large end users in the value chain

Farmers can be provided with information and advice to increase their yield and production, but in some instances, they cannot act accordingly due to financial limitations. To overcome this, it should become easier for small-scale farmers to obtain the necessary financial resources for their investments. The following financiers have been identified: large enterprises, social enterprises, insurance companies, and traditional financiers (local banks and crowd funding initiatives). For all financiers the central word is risk management; the smaller the estimated risk of a farmer, the easier it is for this farmer to obtain financial resources at a lower rate.

Information services, such as weather-, water-, and soil data can aid substantially in the risk management of farmers. Especially large enterprises and insurance companies can use this approach as their company size can make perfect use of such scalable information products. By combining information services for farmers and financial resources you hit two birds with one stone: farmers are equipped with information to grow their business, while the financial gap (as sketched in the 1st topic) is overcome by the involvement of the large financial companies.