Of the examples of agrometeorological services for developing countries, distinguished under ten headings as recently reviewed (e.g. Stigter 2008c; WMO 2010), almost all products developed with focused scientific support are just the seeds sown for the development of actual agrometeorological services in an extension approach (Stigter 2009). But we want to get to a situation in which, in a “farmer first paradigm” (e.g. Chambers et al. 1989; Winarto 2007), livelihood problems and farmer decision-making needs can guide the bottom-up design of actual services. Services based on products generated by operational support systems in which understanding of farmer livelihood conditions and innovations have been used (Stigter 2008a). We have developed in the last decade a good idea of what is needed to develop such agrometeorological services from scientific products generated by National Meteorological and Hydrological Services (NMHSs), Research Institutes and Universities (KNMI 2009). But what we need is institutionalization of science supported establishment and validation of such services (Stigter 2009).

Of the examples originally collected in the INSAM contest for the best examples of such services (INSAM 2005, 2007, 2008), some have been institutionalized and some were developed with and for specific target groups of farmers but not institutionalized. These operational services are the best illustrations of what has been institutionalized in some countries and of what is needed to validate those examples and learn from them. While other examples show the missing links with the livelihood of larger groups of farmers (WMO 2010). The writing on these services was done using a procedure developed and accepted for this particular situation (protocol). The contents of these protocols were fully re-edited and updated for this book (List II.1). Below we make intercomparisons and draw lessons on focused supportive research, institutionalization and validation issues, also referring to other parts of this book. The ten categories of agrometeorological services earlier distinguished by Stigter (e.g. 2008c; WMO 2010) are in List II.2.

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In the first protocol of this Part II, on Design of Sand Settlement of Wind Blown Sand Using Local Trees and Grasses (Sudan), one of a large number of services that we developed at Universities in Africa, it follows from our reporting that we indeed remained in the stage of focused scientific support. The category of agrometeorological services to which it belongs is D., the disasters being desertification and wind blown sand. But, as many examples will show, there are often double category services, because here the mode of the combating of disaster as an agrometeorological service belongs also to category B.

This is definitely unique research, an approach that can be of use everywhere in the world where sand encroachment by wind is a serious problem. The quantitative strategy developed in this problem solving is exemplarious and useful data have been obtained under extremely difficult field conditions. But without a serious follow-up by an internationally supported national institute or a specialized international institute on combating desertification, where the possibilities of air seeding at the right moments of the appropriate vegetation is seriously studied, there are no chances that the developments we report on can lead to any actual agrometeorological service as explained above.

We would like to prevent that we get in the same situation as explained under S. of this protocol, where we state that “The kind of design work on holding back the desert, reported here as an agrometeorological service, could also have been carried out on desertification issues that are at the basis of the resource wars that sparked off many of the civil war situations that occurred and are occurring in Sudan. Appropriate international funding of such work should have started in the 1960s and 1970s, 30–40 years ago, but was refused even 10 years ago for example by ISNAR”. ISNAR is the Institute for Studies of National Agricultural Research of the Consultative Group of International Agricultural Research (CGIAR). But poor countries with regimes internationally seen as doubtful, definitely when acting towards the people suffering from the resource problems concerned, are now unlikely partners in the development of appropriate policies to carry out the required research and experiments. But very often national research institutes in Africa can be trustable partners that can do a lot without government interference.

We have shown here that with great efforts but relatively little means, field research of high quality could be carried out, in a research education context, that showed the direction in which further progress has to be made. The institutionalization of further research related to such problems looks very far away, the marginalization of people and countries suffering from such problems is most likely to remain. So far we have only sown the seeds for the development of actual agrometeorological services in an extension approach. Emergence of those seeds demands a very different international research environment and a very different international political support environment. Most chances for any future progress nationally we see in China.

The second protocol reproduced here, on an Agrometeorological Service for Irrigation Advice (Cuba), is a typical example of a well institutionalized agrometeorological service, for the time being on the scale on which it was developed. It is also an interesting case of an issue we will come across again also several times.