The contents of this book are meant to assist applied agricultural scientists in learning from case studies and other background material how to apply agrometeorology better to solve problems in the livelihood of farmers and other agricultural producers. It also wants to create a renaissance in the teaching (that is education/training/extension) of applied agrometeorology at all levels, closer to the livelihood of farmers and other agricultural producers.

Agrometeorological services are therefore the ultimate focus of this book and applied agrometeorology is shown in the service of farmers, forest and agroforestry related practitioners, and other stakeholders in using an agricultural environment to get enough and better food, fodder, fibre and other natural products.

Early in the course of 40 years of international research, teaching and consultancy, particularly in the non-industrialized world, and more than 20 years of elected international leadership (WMO, INSAM) in agrometeorology, I had become fully convinced that applied agrometeorology should actually be dealt with along different lines.

A WMO educational meeting in New Delhi early in 2007 (see Part I of this book) gave me the opportunity to test some of my ideas with some also invited colleagues from various parts of the world that would advise on new curricula in agrometeorology. They agreed with my proposal to abandon the entry towards Applied Agrometeorology through Basic Agrometeorology and to find entries for it of its own.

Once we had agreed on this basic dichotomy, that meeting designed and approved “Strategic Use of Climate Information”, “Coping with Climate Variability and Climate Change”, “Coping with Extreme Meteorological Events”, “Tactical Decision Making Based on Weather Information” and “Developing Risk Management Strategies” as the present main entry paths to Applied Agrometeorology.

On my way back from New Delhi to Indonesia, waiting for new visa in Singapore, I finalized among others curricula contents under these headings in the form of postgraduate syllabi in an earlier agreed format. I made use of my own earlier ideas and they were later on generally approved by the other New Delhi participants in e-mail contacts. I have to note that I do not like the terminology of “risk management” for small farmers, that generally try hard to cope with their environmental difficulties more than that they manage them. These syllabi are given
in their original form in Annex I.I of Part I of this book. This shows that much historical material needed for new policies would also be collected in writing these syllabi. This is particularly also fully in line with the Sect. II.D on “Communication approaches in applied agrometeorology”.

As indicated in Part I, for that part of these syllabi in which a link with basic agrometeorology is made, material has been collected in Part III of this book. It must show bedrock material for existing or new agrometeorological services. Within local agrometeorology, so on the scale of agricultural fields, this book wants to follow an approach in which actual problems in the livelihood of farmers are shown to be solvable using purely applied science. The latter should be supported by the methods, as tools and approaches, of Part IV, that belong to the basic science support systems.

It should be noted from the agrometeorological services examples collected in Part II that so far the knowledge input into these services is in many cases relatively simple but the complications are in the communications. In collecting and writing the contents of Part III, this has been taken into account. But it means that the enormous amount of material collected may be expected to be a powerful source of tools and approaches for the design of agrometeorological services in many problem fields for a long time to come, scientifically supported by the directions of the contents of Part IV. The context in which we collected the material as agrometeorologists should stimulate the design of more and better agrometeorological services.

In this Part III, the choice of the various subjects, derived from the proposed subdivision of the syllabi under the five headings mentioned above, is fully mine. Their contents are a first approach to the syllabi and determined by the various authors that have written about these subjects. In all cases these authors had been given an example of the proposed approach in the form of respectively Sects. III.2.3.(A), III.3.3.(A), III.4.3.(A), III.5.3.(A), III.6.A.(i), III.6.B.(i) and III.6.C.(i) with the title: “Problems and solutions in coping with extreme meteorological events in agricultural production and challenges remaining for the use of science to contribute to problem analyses and designing valuable solutions in this context” for the respective fields of (i) monocropping, (ii) multiple cropping, (iii) forestry, (iv) non-forest trees, (v) animal husbandry, (vi) cropping under cover and (vii) fisheries.

I am also stating in Part I that once such courses will materialize, it will appear to be information also needed in designs of further adaptation strategies and policies. Good Ph.D.-, M.Sc.- and B.Sc.-thesis research subjects can be designed for increasing the numbers and improving the contents of documented case studies, because often the available information will need extension, adaptation and updating. This is one way in which research can become more relevant to problem solving and problems related teaching and can help improve them. Local knowledge collection will also help in tying research and teaching to meteorological disaster impact experience and to improved preparedness of farmers in different land use and cropping patterns.

After all, it are these thorough links between practice, education/training/extension, policies, research and science in agricultural production that make
applied agrometeorology relevant and valuable, if and when the right ethical choices have been made.

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