WORLD METEOROLOGICAL ORGANIZATION

Report on

The Education and Training of Agricultural Meteorological Personnel in WMO Member Countries

by

V.V. Popova

1979

(CAgM Information Report No. 4)

Distribution: (i) Members of CAgM

(ii) Rapporteurs and members of working groups who are not members of CAgM

Subject: The Education and Training of Agricultural Meteorological Personnel in the Member countries
(CAgM Information Report No. 4)

The report by Dr. V.V. Popova (USSR) CAgM-VI Rapporteur on Training and Education in Agricultural Meteorology, was recommended by the president for circulation to members of CAgM. A copy of the report is therefore attached for information*. It should be noted that this report is not to be considered as an official WMO publication.

---

*The report is translated and reproduced from the original Russian text without editing

Report on

The Education and Training of Agricultural Meteorological Personnel in WMO Member Countries

by V.V. Popova

C O N T E N T S

*Not included in the Information Report

The Education and Training of Agricultural Meteorological Personnel in WMO Member Countries

by V.V. Popova

1. Introduction

The problem of expanding the production of foodstuffs is assuming increasing importance at the present time and calls for the training of agrometeorological personnel, namely, specialists who can help Governments in making use of natural and climatic conditions to improve crop and livestock yields.

The present note consists of a digest of the information obtained from 81 member countries of WMO on the training of agrometeorologists for their own purposes as well as to meet other requirements, mainly those of the developing countries. The question is raised of the standardization of levels of training and the adoption of joint, consolidated qualifications.

A model curriculum for the training of Class I, II and III agrometeorological technicians, as well as a number of proposals concerning the organization of their training are presented with a view to ensuring the requisite quality of training for agrometeorological specialists and a certain measure of uniformity in their training.

The recommended curricula for the training of Class I and II specialists are based on the assumption that certain general subjects will have to be studied, having regard to the specifics of the agrometeorological profession, as well as special agrometeorological subjects. Considerable emphasis in this curriculum is placed not only on intensified theoretical training but also on special practical training for students.

In view of the close relationship between the weather and crop yields, the recommended curricula make provision for the requisite training of specialists in meteorology.

Owing to the wide variety of answers to the questionnaire, I was unable to determine actual requirements for agrometeorologiaal personnel, or the number employed in the WMO Member countries. For this reason, these matters call for further investigation. The seventh session of the Commission for Agricultural

Meteorology will make it possible to define in greater detail the tasks to be performed by the rapporteur so that all necessary aspects of the subject can be clarified .

2. The training of agrometeorologists in the WMO Member countries

Agrometeorologists are trained at five different levels in the WMO Member countries: most senior class: post-graduates, Class I: engineers, Class II: technicians or assistant engineers, Class III: lower-level meteorological service technicians and Class IV: observers.

Agrometeorologists of the most senior class are trained in Brazil, Canada, the Federal Republic of Germany, the USSR, the United Kingdom and the United States.

Class I agrometeorologists are trained in Argentina, Brazil, Canada, France, the Federal Republic of Germany, Hungary, India, Israel, the Netherlands, the Philippines, Portugal, Switzerland, the USSR, the United Kingdom, the United States and other countries.

Class II agrometeorologists are trained in Argentina, France, the Federal Republic of Germany, India, Israel, Kenya, Madagascar, the Netherlands, Niger, the Philippines, the USSR, the United States and other countries.

Class III agrometeorologists are trained in Colombia, Egypt, France, the Federal Republic of Germany, India, Iraq, Japan, Madagascar, Niger, the USSR, the United States, Upper Volta, Yemen and Yugoslavia.

Class IV agrometeorologists are trained in Egypt, India, Iran, Japan, Mali, the Philippines, the Syrian Arab Republic, Tranzania, the USSR, the United States, Yemen and Yugoslavia.

Agrometeorologists are trained mainly at special meteorological institutes or regional centres (Colombia, Iran, Italy, Japan, Kenya, Niger, the USSR and Upper Volta), at universities (Argentina, Australia, Brazil, Canada, Madagascar, the Netherlands, the Philippines, the United Kingdom and the United States), at technical schools, colleges and meteorological schools (Australia, Brazil, Japan, the Philippines, the USSR, the United States and Yugoslavia) and at courses given by the meteorological service (Argentina, Bangladesh, Egypt, the Federal Republic of Germany, India, Israel, Madagascar, Mali, the Netherlands, the Philippines,

Portugal, the Syrian Arab Republic, Tanzania, the USSR, the United States, Yemen and Yugoslavia).

A number of countries train agrometeorologists not only for their own services but also for the developing countries. The number of specialists trained cannot be determined from the replies received to the questionnaire, but nevertheless it is known that various countries such as Argentina, Brazil, Canada, France, the Federal Republic of Germany, India, Israel, Kenya, Niger, the Syrian Arab Republic, the USSR, the United Kingdom and the United States systematically train agrometeorologists of various levels for other countries.

It should be noted that specialists of the highest class for the developing countries are trained in Brazil, Canada, the Federal Republic of Germany the USSR, the United Kingdom and the United States.

Class I specialists are trained in Argentina, Brazil, Canada, France, India, Israel, the Philippines, Switzerland, the USSR and the United Kingdom.

Class II specialists are trained in India, Israel, Kenya, Niger and the USSR.

Class III agrometeorologists are trained in Colombia and Class IV in India and the Syrian Arab Republic.

3. Prospects of improving and expanding the training of agrometeorologists in the WMO Member countries

In view of the steadily increasing need for agrometeorological personnel, many Member countries of WMO are planning to expand or embark upon the training of agrometeorologists at various levels within the next few years. For example, in 1980 Brazil intends to expand and Iraq to embark upon the training of the highest class of agrometeorologists.

Afghanistan, Austria, Iraq, Niger, Poland and Yugoslavia intend to introduce a special supplementary university course in agrometeorology for the training of Class I specialists.

A number of countries (Greece, Malaysia) intend to introduce additional courses in agrometeorology for employees of the Ministry of Agriculture and the Meteorological Service in order to obtain qualified specialized agrometeorologists

of Classes I and II.

The training of Class II agrometeorologists is to be embarked upon by Greece, Iraq and Madagascar, and expanded by Ecuador.

The training of Class III specialists is to be embarked upon by Tanzania and expanded by Ecuador in the very near future.

Chad, El Salvador, Laos, Malawi, Nepal, Niger, Senegal, Sudan and Yemen intend to train Class IV agrometeorologists, and training in Mali is to be expanded. Portugal is planning to extend the basic two-year meteorological course by one year by providing on-the-job training in agrometeorology.

A number of agrometeorological stations are to be opened in Somalia within the next few years, and in this connexion the country intends to train personnel to carry out a large amount of agrometeorological research work. Cape Verde is planning to train a number of technicians at the management level.

Qatar and Surinam have expressed keen interest in organizing courses for the training of agrometeorologists, although they do not intend to embark upon these projects in the near future.

The Philippines has inadequate resources and personnel for the training of specialists at the previous level.

A number of countries have expressed the desire to have special textbooks for the training of agrometeorologists at various levels, to be checked and approved by the meteorological service. It is obviously desirable that such textbooks should be prepared jointly by teachers in a number of countries responsible for the training of agrometeorologists. In this connextion there is a pressing need for the consideration and adoption of uniform standardized curricula and programmes for the training of Class I, II and III agrometeorologists, individual curricula and programmes for the training of the highest class of agrometeorologists, as well as Class IV agrometeorologists, in accordance with the requirements of meteorological services.

To this end it would be desirable at the outset to decide jointly upon uniform standard levels for the training of specialists in agrometeorology, as well as the qualifications required of them, and subsequently to conform to the standards

adopted. Steps should then be taken to evaluate model curricula and basic programmes so that the training of agrometeorologists in the various Member countries of WMO takes place at approximately the same level. On completion of this work, teachers (professors) in a number of countries could, at the discretaion of the WMO secretariat, be requested to prepare textbooks and teaching aids.

4. Classification of agrometeorologists

It is proposed that the following classification of agrometeorologists should be adopted:-

(a) Agrometeorologists of the highest class (specialists having completed their post-graduate studies and possessing a corresponding degree);

(b) Class I agrometeorologists (specialists with a higher education in engineering in the agrometeorological or other natural sciences having completed courses at meteorological or hydrometeorological institutes, agricultural institutes or universities offering special agrometeorological training);

(c) Class II agrometeorologists (specialists with professional technical training at the assistant-engineer or engineer level, but without an engineering diploma);

(d) Class III agrometeorologists (specialists with professional course instruction at the level of the lowest category of station technician);

(e) Class IV agrometeorologists (specialists with training corresponding to the nature of their work and the requirements of the service).

5. Qualifications required of agrometeorologists of various levels

Agrometeorologists of the highest class are specialists capable of independent research work and of directing a group of scientists, of stating and solving problems connected with the investigation of the relationship between agrometeorological researchers, heads of laboratories and academic departments, or lecturers in any kind of educational establishment.

Class I agrometeorologists should be able to carry out and check all types of agrometeorological and meteorological observations, process the data obtained, compile all types of agrometeorological information, reports, forecasts,

special surveys of the growing conditions of agricultural crops, perform field work, contribute to the preparation of annual publications and agroclimatic reference books, determine the agrohydrological properties of soils, and operate and maintain all types of meteorological and agrometeorological instruments. They may be called upon to act as engineers or be placed in charge of large agrometeorological and meteorological sub-divisions.

Class II agrometeorologists should be capable of carrying out independantly all types of agrometeorological and meteorological observations and work in accordance with the programmes of agrometeorological and meteorological stations and posts of all categories, process the data obtained in the course of agrometeorological and meteorological observations, and prepare data for technical purposes.

- Prepare agrometeorological surveys, forecasts and calculations, information and warnings of phenomena harmful to agriculture;
- Arrange for the reliable operation of agrometeorological instruments and equipment and be able to check and repair such instruments and equipment at stations and posts;
- Organize the work of a hydrometeorological station of the lowest category;
- Inspect agrometeorological posts;
- Perform duties relating to the transmission of hydrometeorological data to agriculture and other branches of the economy and provide warnings about harmful phenomena and particularly hydrometeorological phenomena.

They may be called upon to work as technicians, senior technicians, assistant engineers, engineers and heads of the lowest category sub-divisions of the meteorological/hydrological service.

Class III agrometeorologists should be able to:

- Carry out all the simplest meteorological and agrometeorological observations;
- Process the data obtained in the course of these observations;
- Obtain from higher sub-divisons - and transmit to the organizations they service - warnings on harmful hydrometeorological phenomena.

They may be called upon to work as technicians under the direction of engineers or assistant engineers.

Class IV agrometeorologists are persons who have been trained to carry out independent agrometeorological and meteorological observations using the simplest instruments and installations which are actually available in a given hydrometeorological sub-division (station, post), and also to conduct phenological observations and of soil moisture, on small amounts of the agricultural crops actually grown in a certain area. Class IV agrometeorologists are also responsible for the maintenance of instruments and installations used in a given hydrometeorological sub-division.

6. Initial training

The curricula for the training of agrometeorologists of various levels proposed below are based on the assumption that the candidates accepted possess the following initial training:

(a) Candidates for training as agrometeorologists of the highest class should possess a higher education corresponding to the entire range of courses offered by a hydrometeorological institute, an agricultural institute or a university offering special agrometeorological training;

(b) Candidates for training as Class I agrometeorologists should have the basic training required for entry to a higher educational establishment, i.e. corresponding to the entire range of courses offered by a secondary school or qualifications corresponding to those of a Class II agrometeorologist;

(c) Candidates for training as Class II agrometeorologists should have the training corresponding to all or some of the courses offered by a secondary school

(d) Candidates for training as Class III agrometeorologists may have gaps in their education which can be made good during the course of Class III training.

7. Duration of training

The training of specialists of the highest class requires the time necessary to obtain a higher education plus two to three years of post-graduate work.

The training of Class I agrometeorologists requires four to five years; three-quarters of this period is devoted to theoretical training and one-third to practical work.

The training of Class II agrometeorologists requires an average of two to three years, two-thirds of the period being spent on theoretical training and one-third on practical work. The period of training for Class III agrometeorologists extends from six months to two years, the ratio of theoretical to practical work being two-thirds to one-third and, in rare cases, one-half to one-half.

The duration of training for Class IV specialists varies from one to 12 months. The ratio between theoretical to practical training differs considerably.

8. Model curricula and programmes for the training of Class I, II and III agrometeorologists

It was borne in mind in the preparation of the curricula for Classes I and II that agrometeorology comes under the heading of the natural sciences.

The model curricula for the training of Class I, II and III agrometeorologists given below indicate the subjects to be studied and the approximate amount of time (in hours) to be devoted to theory and practical work; the order in which various subjects are to be studied is also indicated by years of study. A number of subjects, such as a foreign language, the biotechnical features of soil structure, plant protection techniques, the planning of agricultural production, etc., have not been shown, although it is felt that they should be included in the curricula to the extent considered acceptable and desirable by each country.

A number of optional (not compulsory) subjects for selection by the students themselves is also given. These include a foreign language, the physical and physiological basis of a plant's resistance to unfavourable conditions, bioclimatology, photography and driving lessons and vehicle maintenance.

The model curricula for the training of Class I, II and III agrometeorologists are presented in annexes 1, 2 and 3. (not included in this information report).

The adoption of the general curricula will ensure the establishment of more or less uniform standards for the training of specialists. However, in view of the different agroclimatological characteristics of each country, a certain

amount of time should be allocated to the student's "narrow specialization", the programmes of which should be drawn up individually in respect of each country or regions of countries specializing in similar agricultural production. The standardization of curricula implies that the subjects they cover will be taught in accordance with strict scientific principles with a view to turning out specialists prepared to engage in independent professional work. With a view to fostering creative initiative on the part of the teachers, educational establishments should be authorized to refine the general curricula adopted in the light of the latest scientific achievements and local conditions, to change the number of hours assigned to various subjects and the order in which they are taught, and to offer understanding that the ultimate goal is to turn out students possessing the minimum theoretical knowledge required and a sufficient amount of practical training.

Particular attention should be paid during the training of agrometeorologists to practical aspects (laboratory and practical training, the solution of problems and examples, work with instruments and equipment, preventive measures, minor repairs, observations in respect of part or all of a programme), and also to specific practical training and on-the-job training, particularly in the case of meteorological and agrometeorological observations, supplying agrometeorological information to State bodies, etc. Practical training under the guidance of teachers is best provided at a specially equipped meteorological platform and agrometeorological observation plots near the educational establishment. In order to enable the students to absorb what they are required to learn in the course of their practical and laboratory work more easily, groups of 25 to 30 should be sub-divided into parties of 12 to 15 or teams of three to four persons. On-the-job training is best done under production conditions by small teams comprising two to three students. Efforts should be made during the course of this training to ensure that practical work and theoretical exercises entail, as much as possible, the use of local materials characteristic of the regional physical-geographical, economic and agrometeorological features of the areas in which the students will work in the future.

The knowledge acquired by the students is checked and verified by means of examinations and tests which are given on completion of the theoretical and practical courses in each subject covered by the curriculum. Where courses cover a very large amount of material, examinations can be given in respect of individual sections

of the course. Examinations are best held about twice a year, just before the holidays and the student should be allowed to two or three days for the preparation of each subject taken. Practical training under the teacher's guidance is best given on completion of the theoretical course relating to each individual subject; on-the-job training, however, is best organized after the entire course has been completed and before the diploma is awarded. The duration of practical training under the teacher's guidance may vary from one to eight weeks, but on-the-job training should last not less than 15 to 18 weeks, depending on the level at which the student is being trained. No on-the-job training is envisaged for Class III agrometeorologists and can be replaced by a probationary period (up to one month at the specialist's future place of work). On completion of their training, future Class I specialists prepare a diploma paper which serves to bring out the personal characteristics of the student, his inclinations and ability to engage in theoretical and experimental work; State examinations are also taken. Future Class II specialists prepare a term paper and take State examinations. Future Class III specialists sit for State examinations and those of Class IV are required to pass a qualifying examination.

When the students have completed all their training and successfully passed all their examinations, they received the following certifications:-

(a) Class I agrometeorologists: a diploma certifying that the student has received a higher education;

(b) Class II agrometeorologists: a diploma certifying that the student has received a secondary technical education;

(c) Class III agrometeorologists: a certificate showing that the student has received training at the junior agrometeorological technician level.

MODEL CURRICULUM FOR THE TRAINING OF CLASS I AGROMETEOROLOGISTS

I. Aggregate allocation of time (in weeks)

Theory		Exams	Practical work	On-the-job training	Diploma work	Holidays	Total	Courses
Weeks	Hours							
33	1188	6	4	-	-	9	52	I
33	1188	6	5	-	-	8	52	II
33	1188	6	5	-	-	8	52	III
18	648	3	-	24	-	7	52	IV
15	540	3	-	8	15	2	43	V

II. Plan of course

	Subject	Allocation of time by semesters			
		Total	of which		
			Lectures	Laboratory work	Practical work (seminars)
	General subjects				
1.	Social and economic subjects	100	50	-	5
2.	Higher mathematics	240	120	-	120
3.	Computer techniques and programming	75	45	30	-
4.	Physics	200	100	70	30
5.	Chemistry	100	70	30	-
	Special subjects				
6.	Protection of the environment	40	40	-	-
7.	Rudiments of electronics	60	45	15	-
8.	Rudiments of geophysics	36	18	-	18
9.	General meteorology	190	110	-	80
10.	Methods used in meteorological and agrometeorological measurements	180	100	35	45
11.	Botony	90	60	30	-

12.	Soil sciences and rudimentary Geology	126	72	54	-
13.	General agriculture and crop farming	200	116	84	-
14.	Plant physiology and ecology	90	60	30	-
15.	Hydrology and basic principles of land improvement	54	36	18	-
16.	Synoptic meteorology and long-term weather forecasts	72	36	-	36
17.	Climatology	132	66	-	66
18.	Agrometeorology	200	120	80	-
19.	Agrometeorological forecasts and information	246	114	-	132
20.	Agroclimatology	150	70	-	80
21.	Agrometeorological information for agriculture	30	30	-	-
22.	Agrometeorological information for transhumance farming	54	36	-	18
	TOTAL:	2665	1514	476	675
	Practical work (in weeks)				
1.	Botany	4	-	-	-
2.	Soil sciences	2	-	-	-
3.	General agriculture and crop farming	1	-	-	-
4.	Meteorology	9	-	-	-
5.	Agrometeorology	22	-	-	-
6.	Agrometeorological information	5	-	-	-
7.	Pre-diploma work	18	-	-	-

MODEL CURRICULUM FOR THE TRAINING OF CLASS II AGROMETEOROLOGISTS

Aggregate allocation of time (in weeks)

	Theory		Exams	Practical work	On-the-job training	Holidays	Total
	Weeks	Hours					
I	30	1080	3	9	-	10	52
II	23	828	3	9	11	6	52
III	12	432	1	3	5	2	26
	TOTAL	2340	7	21	16	18	120

PLAN OF COURSES

	Subject	Allocation of time (by semesters)		
		Total	of which	
			Lectures	Laboratory and practical work
	General subjects			
1.	Mathematics	170	170	-
2.	Physics	170	140	30
3.	Chemistry	100	70	30
4.	Drawing	100	-	100
5.	Rudiments of electronics and radio engineering	100	70	30
	TOTAL:	640	450	190
	Special subjects			
6.	Meteorology and synoptics	120	90	30
7.	Automated processing of hydrometeorological information	80	40	40
8.	Protection of the environment	30	30	-
9.	Rudiments of soil science and agriculture	120	80	40
10.	Botany and crop farming	160	110	50
11.	Meteorological instruments and observations	150	90	60
12.	Agrometeorology	230	170	60
13.	Agrometeorological observations	230	160	70
14.	Climatology and agroclimatology	70	50	20
15.	Hydrology and agricultural improvement	70	60	10
16.	Subjects taken as the narrow specialization	130	100	30
	TOTAL:	1320	930	390
	Practical work (in weeks)			
1.	Determination of the physical properties of soils and agrotechnical improvement	1	-	-
2.	Plant care	1	-	-

3.	Meteorological observations and work	4	-	-
4.	Agrometeorological observations	7	-	-
5.	Compilation of agrometeorological forecasts and surveys	1	-	-
6.	Climatological and agroclimatological processing of observation data	1	-	-
7.	Automated processing of hydrometeorological information	1	-	-
8.	Electrical Assembly electrical measurement and metal working	1	-	-
9.	Technological field work in agrometeorology	16	-	-
	TOTAL	33		

MODEL CURRICULUM FOR THE TRAINING OF CLASS III AGROMETEOROLOGISTS

I. Aggregate allocation of time (in weeks)

Theory		Exams	Practical work	Preparation for qualifying exams	Holidays	TOTAL
Weeks	Hours					
33	1188	1	7	2	1	44

II. PLAN OF COURSES

	Subject	Number of hours		
		Total	Lectures	Laboratory and practical work
1.	Meteorology	95	95	-
2.	Agrometeorology	113	87	26
3.	Agrometeorological instruments and observations and their processing	193	93	100
4.	Meteorological instruments and observations	240	136	104
5.	Automated processing and checking of the results of meteorological observations	137	45	92
6.	Eelectrical and radio engineering	132	92	40

Practical training

1.	Meteorological instruments and observations	3
2.	Agrometeorological instruments, observations and their processing	3
3.	Automated processing and checking of meteorological information and observations	1

The number of hours indicated for each course includes lectures and laboratory and practical work. An indication is given at the end of each model curriculum of the total number of hours of purely practical work, distributed by semesters and mainly in respect of special subjects.

It is proposed that the following special optional courses should be offered to students receiving training as Class I agrometeorologists:

1. Mathematical models in agrometeorology.
2. Agrometeorological principles of land improvement and agrometeorological information for dry and irrigation farming.
3. Entomology and phytopathology.
4. Theoretical basis of climate regulation.
5. Mathematical models in agrometeorology.
6. Rudiments of cosmic geography.
7. Agrometeorological basis for the protection of plants against pests and diseases.
8. Methods of preparing agroclimatic maps.

It would be desirable to single out the subject "crop farming in the tropics" during the training of Class I and II agrometeorologists for the developing countries.

Training for Class I and II agrometeorologists can also be offered at other higher and intermediate special educational establishments by the introduction of supplementary courses on conventional subjects, depending on the level of the specialists being trained. In this case allowance must be made for subjects of a general nature, and special subjects that have not previously been taken at higher educational establishments and technical colleges must be included in the curriculum.

If the student studying to be a Class I or II agrometeorologist had previously received a general engineering or technical training, his curriculum should preferably include a number of subjects in the natural sciences and agrometeorology; if his specialized training is mainly in the natural sciences, his curriculum should include meteorological and agrometeorological subjects, but also ensure that he takes the minimum number of physical and mathematical subjects.

9. Organization of the training of agrometeorologists in developing countries

In view of the steadily increasing level of qualifications demanded of people in general and agrometeorological specialists in particular, as well as current difficulties encountered in organizing the training of qualified personnel in the developing countries, efforts should be made to encourage the trend to send the best trained secondary school graduates produced by the developing countries to the developed countries, and particularly to those that have acquired a reputation for the sound training of specialists.

In this connexion, a recommendation should be addressed to the appropriate bodies in the developing countries to make greater use of bilateral agreements on cultural, scientific and technical co-operation as well as grants made available by international organizations (WMO, FAO, etc.). Students from the developing countries should be given the opportunity of making use, in their practical work and the exercises that are part of their training, of material reflecting the agrometeorological growth conditions of individual crops, the various agricultural operations and the conditions in which the cattle live and graze in the territories of their respective countries.

In addition to the training of agrometeorologists from the developing countries at the training centres in the developing countries, every effort must be made to provide assistance in the organization of training for Class I and II agrometeorologists at existing educational centres and to establish special regional and national educational centres on agrometeorology.

As regards the training of Class III and IV agrometeorologists, it should be organized on a national basis by the introduction of special courses. In view of the need for the rational incorporation into scientific circles of

additional resources, for the acceleration of scientific and technical progress, and for the harmonious development of the individual in modern society, it is becoming increasingly important to improve a person's qualifications without any interruption in productive activities. The combination of practical work with theoretical training makes it possible to ensure the uninterrupted performance of various agrometeorological tasks and at the same time raises the qualifications of engineering and technical personnel already on the job in the developing countries.

Wherever necessary, the developing countries should be provided with assistance in organizing the training of agrometeorologists by the preparation of textbooks and teaching materials, and by sending qualified teachers to give courses of lectures.

In view of the fact that questions pertaining to the training of agrometeorologists are bing dealt with by a number of specialists in various international organizations (WMO, FAO, etc.), their work must be closely co-ordinated if duplication and incompatible activities are to be avoided. Such co-ordination can be achieved by the joint consideration and solution of the most important problems connected with the organization of training for agrometeorologists, which will ensure the more rational use of the possibilities available to specialized organizations in providing assistance to developing countries and offer sounder solutions to problems of methodology connected with the training of agrometeorological personnel.

Related WMO Publications of interest to Members of CAgM

1. WMO No. 240 - Compendium of Training Facilities

2. WMO No. 208 - Guidelines for the Education and Training of Meteorological Personnel