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Training program at the Bari Mediterranean Agronomic Institute

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The recent evolution of ICAMAS towards greater integration with non-European Mediterranean countries has made it possible to achieve the rather important objective of bringing together, at the same level 12 countries and inter-governmental organizations such as the OECD, the Council of Europe, the EEC, the FAO and the Arab League, for the purpose of examining the area's agricultural problems. This evolution has, however, created functional problems, the solutions to which may sometimes be found outside of the traditional operating patterns that have been followed so far, but nevertheless always respect the roles attributed to the different bodies by the agreement of 1962.

The same is true for research. ICAMAS must play a flexible role by favouring occasions for researchers to meet on specific problems of Mediterranean agriculture, without however neglecting - should the necessary structures and qualifications be available - direct operational collaboration. Aside from the fact that it is very useful for concerned countries, such collaboration constitutes a basis for stable contacts and lasting relations. The experiments at the Bari Mediterranean Agronomic Institute (B-MAI) that have been concluded and are ready to begin in

concertation with certain member countries, confirm the validity of this approach.

The same applies also to training, for which it is necessary to take into account the real requirements of rapidly evolving countries in which great progress has been accomplished and great efforts are underway for perfecting not elitist, but rather generalized instruction models based on standards that are compatible with national socio-economic situations.

Given the existence of differences between various countries that cannot always be mitigated over the short term and the will to work together to overcome them, the role of ICAMAS through its operational bodies can still be very useful and advantageous by transferring the positive results of one member and by exploiting the favorable experiences of another, while always avoiding simplistic and often deceptive generalizations.

The need to develop ICAMAS training activities on broader and more diversified bases emerges from the different role that should be played by the Center. ICAMAS came into existence as a sort of restricted club of seven European countries interested in training their post-graduate level

personnel. It was on this basis that it prepared the structure and program of courses for the Mediterranean Agronomic Institutes of Bari, Montpellier and Saragossa.

With the increasing needs arising from cooperation with developing countries, ICAMAS has been called upon mainly to develop training activities in this field and thus to adapt its programs to a different demand.

I - Recruitment problems

Without entering into the heart of situations prevailing in the other ICAMAS institutes, and thus limiting the considerations and references below to the B-MAI, it can be said that for both recruitment and programs as well as for degrees that can be obtained, it is still possible to take initiatives that would make the present didactic activities, notably in irrigation techniques and virology, more efficient and up to date.

Recruitment was not a problem until the Institute started training civil and agronomic engineers from countries with rather different schooling systems in the area of irrigation techniques. Today, it is one of the most difficult problems to resolve. The first problem arises from the divergence in the participants' basic preparation. It seems insoluble even if differentiated preparatory courses in both professional categories have recently given good results, because school curricula and study plans are known only secondarily. Furthermore, the fact that both professional categories have a common interest in the problems of drainage and land improvement through irrigation prevents limiting the courses to only one category.

To this difference or divergence among course participants one must add another, also difficult to correct, which arises from the different professional knowledge to which a same degree may correspond, depending on the level and study plans of the universities in countries that are sometimes completely different in their social organization, stage of development and sometimes also their religion.

The most adequate solution to this problem seems to be direct preliminary selection of candidates;

but this is very difficult because of the number of countries from which the candidates come and because of the delays (for some of them) between the date at which scholarships are attributed and the date at which the degree required by ICAMAS is obtained. Finally, there is also the difficulty of using, for selection purposes, diplomatic services which generally are not organized for such a task.

The only directions that remain to be explored are thus to limit the number of countries for which the B-MAI courses are offered through the Ministry of Foreign Affairs - even if this obviously guarantees nothing from the point of view of the candidates' professional level - and to delegate the selection process to scientific and/or training bodies working in different countries. Although the latter solution, recently adopted, has the inconvenience of inevitably limiting applications to the fields covered by the delegate bodies, it has nevertheless made it possible to obtain encouraging results in various countries, both Mediterranean (Egypt, Morocco, Tunisia and to a certain extent Lebanon), and in other more distant geographic regions (People's Republic of China).

The situation regarding the virology courses is more homogeneous and therefore, within certain limits, less problematic, since they deal with advanced specialization techniques and address trainees with rather homogeneous basic knowledge. However, for this course as well, recruitment should be delegated to local scientific and/or training bodies.

Even if this recruitment procedure is not, in absolute terms and for the above-mentioned reasons, the most efficient solution, (which would be the direct selection of candidates by the heads of different courses) it can make it possible to a certain extent to adopt more flexible criteria in the evaluation of degrees required for admission, thus giving greater importance to aptitudes, experience and personal reasons of potential candidates that do not have the required academic degrees.

II - Programs and degrees

The training programs are mainly based on irrigation techniques, for which two courses have

been set up. The first lasts one year for a post-graduate specialization diploma (DSPU), and the second, also lasting one year, for a master's degree (M.Sc.) - and in virology on the "production and protection of Mediterranean fruit varieties". This course's didactic activities are supervised with the collaboration of the FAO and the Plant Pathology Department of the University of Bari.

The training programs in irrigation techniques also took place according to the indications given by the interested parties and on the basis of results obtained each year. Such continuous improvement has so far produced a rather stable structure that includes both theoretical and practical activities in the international irrigation course. Furthermore, practical activities have very recently acquired the role and importance they deserve. This is notably the case for the DSPU course whose theoretical part is divided into weekly didactic units with a test at the end of each course covering the following:

- soils, water and their relationship (four courses)
- water requirements of different crops (four courses)
- irrigation methods (three courses)
- water quality, drainage and improvement of saline and alkaline soils (four courses)
- water management (one course) and a few economic aspects of irrigation (four courses).

On the whole, this represents an average of 580 hours corresponding to 52% of all didactic activities.

Practical activities include laboratory work, team work in writing up small and medium irrigation projects, technical visits and field activities, representing a total of 526 hours or 48% of all didactic activities. In addition, approximately 20 seminars are organized every year on specific subjects (for a total of 50 hours) that complement the courses.

At the end of this training course, an advanced post-graduate degree is given which allows the best students to pursue their studies for a master's degree.

This type of diploma, based on writing experimental monographic studies, could not be obtained until 1981. It has attracted great interest and there have even been requests for admission from scholarship students who studied in the first year course in preceding years.

As of the 1985-1986 academic year, the B-MAI, in collaboration with the FAO and the Plant Pathology Department of the University of Bari, is organizing a new training activity for obtaining the DSPU in the field of virosis, a vitally important question in the Mediterranean region.

As is the case for the course on irrigation techniques, the course on plant pathology is organized into 36 weeks of lessons - two in agricultural economy, 13 in tree crops, six in agronomy, 11 in plant pathology, and four in agricultural entomology. The theoretical activities are complemented by practical activities conducted in modern and advanced laboratories.

The DSPU virology course on "The production and protection of Mediterranean fruit varieties" will be complemented as of September 1987 by a second year program (M. Sc.) which has already been prepared by an *ad hoc* committee. It will be developed in close collaboration with the Plant Pathology Department of the University of Bari.

The increasing demand for training at the Bari Institute is obviously tied to the fact that the programs offered are of interest and that the professors in charge of instruction are well known specialists in their country of origin (Italy, France, Great Britain, West Germany, Greece, Netherlands, United States and Egypt) and within international organizations (F.A.O.).

The results obtained so far seem positive, without any doubt, and they deserve a few comments.

In the first place, beyond the evaluations made by international commissions in charge of verifying the level of trainees both in the first and the second years (which have simply confirmed the validity of the approach adopted) it can be said that the relationships which develop over a year of studies among young people of different origins, religions, social classes and types of education already constitute a result that has a profound effect on everyone. Thanks to this experience, these young people working in teams must

overcome the conditioning tied to the sometimes antagonistic relationships that exist between their countries of origin.

Another equally positive result is the social advancement of the participants. The first and second year diplomas are recognized and considered valid in their countries, allowing them to obtain higher positions. Indeed, this social advancement, given past experience, is considered by the trainees to be the result of the Institute's commitment toward them, a commitment which they always remember even years later by remaining in contact with it and offering or requesting collaboration.

III - New perspectives

Finally, as far as the results are concerned, the high level achieved by trainees at both the first and second year exams is highly satisfactory according to the annual reports of the evaluation commissions.

The standard courses noted above may be of considerable importance for development, but in my opinion they do not exhaust the possible forms of cooperation with member countries of the Mediterranean region. It would be possible, in these countries, to identify reliable structures that could be directly associated with ICAMAS training programs, both for the actual implementation of part of the curricula and the organization - in consultation and with the scientific co-responsibility of the ICAMAS bodies having statutory responsibility for this task - of short advanced specialization courses.

In the first case - supposing that trainees of the Ministry of Foreign Affairs overcome the administrative difficulties tied to the use abroad of funds attributed for studies in Italy - it might then be possible to start cooperative training programs. These could (for the master's) include a section on data definition and processing that could develop in Italy, and an experimental section, more tied to environmental conditions, to be developed in the country of origin under the scientific responsibility of local experts. This would make it possible to broaden considerably, both the possibilities for experimental studies in difficult

subject matters that are to be studied, in practical terms, in very different climatic and/or socio-economic conditions and the possibility of using whatever work has been achieved for professional purposes based on such local experience.

In the second case, advanced training courses could be held on specialized subjects that have not been dealt with in the standard courses, or that require more in-depth study that is particularly necessary in certain countries or geographical regions. This could be done by favouring financial support for such courses and by guaranteeing a high scientific level that would valorize and integrate local competence. Experiences will soon be made in this sector by the Cairo Water Research Center and the B-MAI.

The problem of the diplomas is closely linked to the subjects of the courses, and therefore to the validity and the currency of the programs, to the possibility of their own theoretical and practical conduct, and to how they are recognized. In other words, how they can really be used in the current conditions of the various countries.

The two aspects are obviously, but not automatically, related, since it is the subjects' validity rather than the degree of access to the diploma which determines the Institutes' credibility and therefore the possibility of various States recognizing the degree. Clear didactic norms and rational evaluation criteria - necessarily the same within ICAMAS but complying with the courses' structure and organization, particularly for practical activities and team work - should guarantee the courses' quality and therefore the validity of the degree obtained. The latter should respect post-graduate standards of reference and at the same time be compatible with the international nature of the promoting body.

Recognition by the Egyptian government of ICAMAS diplomas obtained at the B-MAI after an in-depth examination of their level, is a direction to follow for all courses in ICAMAS institutes in all countries, and particularly (this seems indispensable to me) - in all member countries of the Centre.

The task is a complex one and must take into account the educational systems of various

countries. Unless there is specific recognition, a DSPU or M.Sc. degree may, in practical terms, be a waste of time for those who obtain it if it is not directly usable. Obviously, it would be better to obtain a national diploma or to follow a post-graduate course in a recognized university.

Consequently, it is necessary to adopt the supply to the different requirements of potential beneficiaries, this being particularly valid for first

year diplomas (DPSU), for which there is no corresponding national level of specialization in many countries, even in the Mediterranean area.

These are, in my opinion, some of the important aspects of ICAMAS training policy. They seem, furthermore, to comply fully with the Centre's recent evolution towards fulfilling a clear policy of cooperation and integration between Mediterranean countries.