Higher agricultural education in Portugal

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Higher Agricultural Education in Portugal

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Higher education in Portugal is governed by its own legislation and currently covers both university and polytechnical education.

The higher education system sanctions academic degrees which, in many instances, are comparable to professional titles. The first university degree (*Licence*) is awarded upon completion of the first cycle of higher education - which involves an average of five years of attendance at Portuguese universities (with or without a thesis at the end). The candidate's work is submitted to an examining jury for analysis, discussion and grading. Such education/training prepares students for scientific and professional activities.

The second academic degree (the second cycle of the higher education process) confers the title of Master and requires a minimum two year period of study.

Still under the university heading, the academic degrees at the third level are the doctorate and the *agrégation*.

Non-university higher education (polytechnical education) leads to the Bachelor's degree at the end of the first cycle of higher education studies, with an average of three to four years in school. Presentation of an apprenticeship report is obligatory. These studies are pursued with occupational goals in mind.

To summarize, the academic degrees of the higher education system are as follows:

Polytechnical education - bachelor's degree

University education - *Licence*, master's, doctorate, *agrégation*

Figure 1 shows the relationship between age and the various phases of the educational process.

An intrinsic part of higher education, the university is freeing itself from the bonds of traditionalism. Through the quest for knowledge, it furthers the cause of culture, promotes education, and prepares the way for professional training (pre-preparation for career activity). The university is thus more than a place for the acquisition of knowledge.

Its mission is to combine in one and the same institution a wide range of training areas and disciplines, while steering clear of over-specialization (particularly at the initial academic level) in its applied programs. In a professional manner, the university must also keep ahead of regional development needs.

Training at the university level which leads to professional positions) moves through several interrelated cycles which are designed to support rather than simply to confer professionalization at different levels of competence. It should be noted, however, that in terms of access to higher education, the professional stream of secondary education can provide for greater effectiveness in the future training of students by improving their initial orientation.

The first academic cycle is very demanding and thus of an importance that should by no means be underestimated. It is high level general instruction based on a coherent program that is logically organized to meet specific needs. Well taught, it allows for the emergence of varying plurivocational options from the same orientation. This is the first *Licence* degree that is available in the various areas of university training.

The doctorate and *Agrégation* degrees, more specialized, belong to the training phases of the third cycle of studies in higher education.

On the polytechnical side, training is more strictly career-oriented. Its thrust, in the agricultural sector as well as in others, is toward the exercise of predominantly executive functions, emphasizing active participation in the training of different types of operational teams in agricultural production and development. In this way, it meets the needs of farmers to keep up with the times.

To summarize, higher education at the first degree level seeks to provide basic scientific instruction while supporting pre-professional training oriented toward openings on the labour market. By way of the first degree, the post-graduate program (first specialization) and even the doctorate, higher education covers a trajectory that is in keeping with its universality, its flexibility, and its integration into the realities of the modern world of knowledge. Training thus proceeds, at the university, through a set of disciplines where the depth of instruction enables the adoption of more or less solid professional directions. Various associations sanction professional titles, stimulate specialization, and play a part in defending professional interests.

The university provides "trainers". In drawing up the curriculum, therefore, the development of basic sciences is essential in order to consolidate the objectives of the various training courses or options within the agricultural sector. **The map** below shows the geographic distribution of university agricultural education in Portugal.

Non-university higher education, under the responsibility of the advanced schools of agriculture, gives attention first of all to practical preparation and then to training oriented toward the field of applied or vocational sciences. This is the shortest educational program (3 to 3 1/2 years) including apprenticeships which are the key to success. Non-university higher education covers the country's regional needs.

I - Different types of training in higher agricultural education

1. All higher agricultural education (HAE) in Portugal is run by the State. The private and cooperative sectors do not provide training courses in agriculture.

Higher agricultural education is conducted at the level of the *Licence* (first academic degree in the first training cycle) at the universities. The duration of the courses is approximately five years of scholastic activity with a discussion of the apprenticeship report at the end. This report is prepared over a period of about six months.

Non-university higher education is offered by the Polytechnic Institutes, which confer a bachelor's degree at the end of 3 to 3 1/2 years of schooling and the completion of an apprenticeship for which a report is written and defended.

A - UNIVERSITY HIGHER EDUCATION

The following Portuguese institutions offer university training in agriculture:

- Lisbon Technical University:
a) Advanced School of Veterinary Medicine, offering a *licence* in veterinary medicine;

b) Advanced Institute of Agronomy, offering *licence* degrees in agronomy, forestry and agro-food industries:

- University of Evora

- University of Tras-Os-Montes e Alto Douro

- University of the Azores

organized into departments with courses in agriculture, animal husbandry and forestry (the latter only in Tras-Os-Montes e Alto Douro); and

- University of Algarve
(horticulture and fruits).

B - NON-UNIVERSITY HIGHER EDUCATION

The polytechnical institutes, through the advanced agriculture schools (of which the oldest, Coimbra and Santarem, have six years of training activity), offer agricultural education at the following:

- Advanced Agricultural School of Santarem
- Advanced Agricultural School of Coimbra
- Advanced Agricultural School of Castelo Branco
- Advanced Agricultural School of Bragança (first year of activity 1986-1987)
- Advanced Agricultural School of Beja
- Advanced Agricultural School of Ponte de Lima (not yet operational).

2. The university confers an academic title: the *Licence*. This degree differs from the title of Bachelor conferred by the polytechnical system. Professional titles (professional aptitude) are conferred by the employer sector as well as by the legitimate representatives of the employees' professional interests, even though training for these occupations takes place at the school level in keeping with a certain profile (scholastic aptitude).

The civil service or public sector insists on *licence* degrees, in some instances even specifying what kind, identifying them with the scholastic and professional aptitudes of the candidate.

II - Training objectives

1. Bearing in mind the structures and evolution of national agricultural production, higher agricultural education seeks to cover the different fields thanks to qualified personnel without losing sight of the prospects for the professional markets of the future.

2. The public sector is the main employer. It absorbs approximately 95% of trainees in veterinary medicine. At the present time employment opportunities in the private, cooperative, foreign and international sectors are not yet very significant.

In the agricultural training context, the public sector is also the main employer, although there has been an upturn of demand in this area in the private sector (production, industry and even commerce).

The specialization that has been tried and verified in the agricultural sector may constitute, in terms of future evolution, the support proposed to the operational teams, which, with these extra responsibilities, will find the best solutions for agricultural problems arising in the course of development.

Openings in the primary, public and private sectors are not yet sufficient to guarantee full employment to graduates with the bachelor's or *licence* degree. They must therefore resort to other activities, notably in the field of secondary, professional and vocational teaching. Students are even beginning to show an interest in careers connected with the economic sector, particularly the management of agricultural enterprises.

3. Educational programs seek to stimulate the student's awareness of his own future as an active agent in the evolution of the production sector, while giving him a basic training.

On the university side, there is a certain trend toward belated specialization, which does not seem to be true of polytechnical education. Despite its recent establishment, the latter tends rather to create early specialization.

Considerable differences have also been observed in the orientation and programming of basic disciplines.

In polytechnical education, taking into account the different means of entry and the large number of students coming from career-oriented secondary training, knowledge of basic disciplines must be broadened compared to students with secondary scientific education. Basic disciplines tend to consolidate training programs at the secondary level.

One shortcoming of the education offered by the various institutions is the lack of compulsory apprenticeships of different types, both prior to enrolment and especially during the school year.

4. Aspects of agricultural education in Portugal.

a) A high degree of diversity and competitiveness in training capability. Optimum solutions are sought taking into consideration the course structure and the specific features of each institution.

b) Regional adaptation. In some instances, training capability accentuates creative imagination keyed to the school's regional framework with respect to vocational disciplines without neglecting the broad knowledge base needed as an underpinning for such a policy.

c) Ease of intercommunication between university and polytechnical training as well as among the university training programs themselves. Evaluation of disciplines (designations), courses (curriculum and subject matter), and hours required (credits) is the responsibility of the Scientific Advisory Boards, which decide on the acceptability of equivalence of disciplines or require entry examinations in certains subjects or even disciplines. An effort is made, moreover, to avoid letting the idea of intercommunication impose program uniformity on the curricula or on their evaluations.

d) With respect to curricula, an effort has been made to establish a synthesis of basic subject matter and supplementary information in vocational courses by permitting some degree of interpenetration (diversified training, knowledge of subject matters) without going into depth. This is to avoid the temptation to engage in career-oriented activities removed from the vocational objective of the course, while still encouraging and broadening multiple working hypotheses through training of more specialized teams.

e) Variable extension of courses. Course duration (baccalaureate - 3 to 3.5 years, and *Licence* - five to six years) facilitates faster training on the applied side and slower training on the university side. But taking demand into account, supply is matched to the current situation, encouraging development of capacities on the basis of the training of generalists, opening the way for specialization in the second and third cycles of university training.

f) Accelerated expansion of polytechnical education. Polytechnical education began in 1980 and has expanded very rapidly. In 1985-86, there were 4,091 students enrolled in higher agricultural education, with only 712 (17%) in polytechnical education.

In 1986-87, the number of students enrolled for the first time in polytechnical education was about 30% of the total number of students who enrolled for the first time in higher agricultural education (147 out of a total of 491). The projection for 1987-88 is 46% of the total. Once the polytechnical courses have been shortened, the number of graduates under this heading will soon tend to dominate.

III - Organization

1. Institutions

a) Academic institutions in Portugal are set up according to two models. The first involves integration into a university, school or institute with a high degree of autonomy. Such is the case with the Lisbon University of Technology, with the Advanced School of Veterinary Medicine and the Advanced Institute of Agronomy. The second model, now in the process of being tested at the new universities (Evora, Azores, Algarve, Tras-Os-Montes e Alto Douro), has courses conducted by various departments depending on the central university administration without the intermediary structure of a school or institute.

b) Polytechnical higher education is organized into schools (advanced agricultural schools), which are integrated into polytechnical institutes.

All agricultural educational establishments are under the responsibility of the Ministry of Education.

2. Professional recognition of academic titles

Educational institutions confer academic degrees (diplomas) and not professional titles which are granted by professional organizations. However, in order to qualify for professional positions, the academic degree will sometimes suffice, depending on the level and type of training. Training for vocational activity is more or less intense, depending on the institution.

3. Programs

In general terms, training at the baccalaureate and *licence* level involves three distinct phases.

Phase 1: Instruction in basic sciences

Development and study of the basic sciences in order to promote comprehensive training. It lasts about 1-1.5 years for the *Licence* and one semester for the baccalaureate.

Phase 2: Intermediate (Propaedeutic) study

Instruction in sciences relevant to applied disciplines as well as to career orientation of courses. It lasts about 1 to 1.5 years for the *Licence* and one semeter for the baccalaureate.

Phase 3 : Vocational education

Instruction in sciences keyed to applied knowledge, giving university studies a plurivocational stamp. It lasts at least two years for the *Licence*.

Phase 4: Post-course training session

Completion of an apprenticeship and preparation of a report (at least six months).

These phases, which should not be confused with training cycles, are variable in terms of extension program content and do not lead to any diploma. They are links in a training chain, with a passing grade as the goal in each instance, and variable grades in the different disciplines included in the various phases (on a scale of 1 to 20 points, the passing grade being from 9.5 points up).

On the vocational side, the objectives vary from one institution to the next; in polytechnical education, an effort is made to emphasize vocational training, whereby practical instruction predominates over theoretical instruction.

The structure of courses and even the programs are developed by the scientific sector of the university, although they are subject to a certain degree of supervision by the Ministry of Education. Recently, in some universities, consultative bodies have been created, consisting of representatives of the economic and professional sectors linked to the fields of instruction offered. The activities of these groups are beginning to have an impact on course structure and program definition.

In disciplines of a vocational nature, mainly those calling for more solid basic knowledge and interpretation of various interests, teaching should also be keyed to the search for an integrative principle covering these branches of knowledge, by facilitating the grouping of classes and the assembling of the various interests in such a way as to establish connections and help the student form a habit of situation analysis based on varied knowledge of a fundamental character.

4. Evaluation of students

For the assessment of student capacities, there are evaluation tests by training cycle as well as final examinations in each of the disciplines that enter into the different school years in each type of education, grouped by preparation phases as already mentioned. Grades and credits are given, and the final classification is based on the general average between the median of the disciplines taken together plus the grade earned for discussion of the training session report. There is also a system of precedents.

5. Teaching/research

The higher education institutions maintain their lines of research linked to programs having international support, as well as to projects financed from their own funds or centers of the National Institute of Scientific Research.

Cooperative agreements with other institutions of the Ministry of Agriculture, Fisheries and Food, notably the NIAR (National Institute for Agricultural Research) support teaching and research activities. Mention should also be made of the more permanent type of activity generated by contacts between the university and the Institute of Tropical Scientific Research (special cases of the Advanced School of Veterinary Medicine - HSVM - and the Advanced Institute of Agronomy - HIA).

All personnel connected with the above-mentioned bodies as well as with other governmental agencies not belonging to the Ministry of Education take part in teaching activities, on the basis either of agreements or individual contracts. This makes the education task easier and more effective, as well as more sensitive to the reality of national problems.

The result is that the educational institutions have teaching positions available which, without entirely solving the problem, somewhat alleviate the difficulties in personnel and financing, since

the national crisis has put considerable limitations on access to qualified personnel. A teaching/research complementarity is currently being tried, broadening pedagogic activities and student motivation through the training of instruction teams. We think this is a good idea, on the condition that these collaborators have access to supplementary remuneration, which is still insufficient. The situation is expected to be clarified by forthcoming decrees.

6. Post-graduate courses

a. The second and third cycles of university training are seen as providing in-depth knowledge on the road to specialization.

An effort is made, by way of the second cycle of university studies (master's) to offer more specialized preparation in vocational areas. For example, the HSVM, in collaboration with the National Zootechnical Station (Portuguese Center of the NIAR engaged in activities of the I-DE in animal production) offers a two-year master's course in animal production.

The Advanced Institute of Agronomy offers a post-graduate master's course in plant production.

Without sacrificing the essential features of either situation (teaching and scientific research), and safeguarding the legal aspects involved, an attempt is made to make teaching and research activities complementary - even if they depend on different ministries or services - through the training of teaching and research teams, and by promoting the establishment of "scientific parks" or centres of excellence. It is not a matter of integration but of a complementarity which safeguards the various origins and dependencies.

b. Permanent or continuing education needs dynamism and demands organization and initiative. Instead of turning inward, such university education opens up to the outside world which maintains it, which justifies it and which takes pride in it. Continuity and change are not antagonistic attitudes in the university of the future. It must not be reduced to a mere service role in a situation where an economic view might be too restrictive. Myths that become attached to the key words in science policy have to be overcome, if difficult situations are to be avoided. The university is not, and cannot be, a commercial agent for the dissemination of progress. The university is a center of decision-making as well as of administration - where activity is perceived as aimed at facilitating other activities. To this end it includes selective and regional components. (Education, labour and development are agents of the socialization of knowledge, pursued in a continuous and permanent fashion).

Higher agricultural education confers specialized diplomas and provides updating of knowledge over the short term, at different levels of professional training, pending "training of trainers" or agents responsible for extension work.

These activities are undertaken by its own initiative or at the request of users. In recent years, as we have already indicated, the higher education and research institutions have established a consultative advisory board which brings together the various users and other parties involved in agricultural activity.

7. Teaching Personnel

University teachers are governed by legislation which defines careers and spells out conditions for promotion. There are five career categories: Assistant Teacher Trainee, Lecturer, Assistant Professor (after the doctorate, with or without the *agrégation*), Associate Professor (with or without the *agrégation*), and full Professor.

Polytechnical education also has five categories: First Triennal Assistant, Second Treinnal Assistant, Deputy Professor, Coordinating Professor without *agrégation*, and Coordinating Professor with *agrégation*. Salaries here are lower than in the universities.

Each institution has its own professionals, and public competitions are held for promotions from one category to the next. The competition is simplified by the obtaining of academic ranks after the *Licence*, such as master's, doctorate and the *agrégation*.

Depending on the number of years in each category, instructors and investigators are entitled to receive extra pay for seniority and salaries are paid by the State.

Availability of State funds is reflected in the size of staff, both regular teaching and auxiliary personnel, thus reducing room for intervention on the part of the institutions.

8. Equivalence of titles and diplomas

Academic degrees earned abroad may qualify for equivalence, with the proviso that evaluation and judgement are made by a jury appointed by the Rector of the university, after an opinion has been given by the scientific advisory boards of those institutions which require equivalence. Each institution is entitled, with the scientific advisory board as mediator, to decide on requests for equivalence of disciplines or diplomas.

Evaluation of disciplines (designations), of the program (curriculum content) and time (hours) required for credits is up to the scientific advisory boards. They decide on the grounds either of acceptance of direct equivalence of the disciplines, or of the results of *ad hoc* examinations in certain subjects or disciplines which will allow for obtaining the desired equivalence.

9. Students

a. Access to higher agricultural education is limited by quota (*numerus clausus*). All students who have completed complementary secondary education may submit their candidacy, either through academic channels or via technico-professional channels as well as by the professional channel with a minimum apprenticeship of three years (see **Figure 1**).

The academic channel logically implies admission to an advanced course of study. For students who have enrolled in the tenth year through this channel, one of the options open is linked to agriculture: vocational training in agricultural production (see **Figure 2**).

The **technico-professional channel** is inserted into the current system of complementary secondary education which includes the following components: general training, specific training, and technico-professional training. While these courses require three years of study (10th, 11th and 12th years), they lead not only to a final secondary school diploma opening the way into higher education, but also to a technico-professional training diploma preparing the way for entry into the labour market.

The following technico-professional courses are related to agriculture:

Technical agriculture coures - agriculture production

- Technical agriculture courses - forestry

- Technical agriculture courses - food industries

- Technical forestry courses.

The **professional channel** covers one school year followed by a professional apprenticeship of six months. It leads to a diploma confirming the professional qualification obtained with a view to integration into the respective professional careers.

There are also professional training courses for applied agriculture, applied forestry, and agricultural mechanization.

While it is said that the various channels permit parallel access to higher education, there is not really any equality. Students completing the first academic channel may compete for one of the advanced courses leading to the *licence*, whereas students in the professional and technico-professional channels can only submit their candidacy for advanced agricultural courses toward the bachelor's degree (advanced agricultural schools of the polytechnical institutes) on a special contingency basis, an unfavorable condition compared to that enjoyed by students completing the first academic channel.

The uniform and impersonal rules are actually a rather inadequate way of evaluating the students' motivation for the course of study. At the national level (Office of Higher Education Admissions Coordination), students are assigned by a computerized system keyed to final grade averages (by national examination for access to higher education) and to proposed options. Another shortcoming of such course programming is its failure to include a discipline serving as an introduction to activities connected with the training to be acquired. The student is thus on unfamiliar ground without adequate institutional support, because if he wants to follow a course calling for a scholastic showing above his level as condition of admission, he ends up being put into another area (his second, third or even fourth option).

To summarize, the quota (*numerus clausus*) may cause annual variations in the average enrolment classification. Other access channels are also established each year with variable quota

percentages applicable to the following school year. The channels in question are as follows:

- Special *ad hoc* capability evaluation examination (10%)

- Another advanced course (special aptitudes) (2%)

- Scholarship students from Portuguese-speaking African countries (5%)

- Brazilian secondary education (2%)

- Other higher education systems (courses abroad) (3%)

- Change of program (10%)

- Resumption of studies (10%).

In calculating the quota, account is taken of labour-market demands as well as of physical, human and other capacities of the institutions.

b. Evaluation of students is done on the basis of periodic examinations in course subjects and/or final examinations, supplemented by assessment and grading of personal projects as well as by seminars and other activities that may differ at each institution resulting in a certain amount of variety and originality.

c. Low cost of studies. Tuition fees paid by students are so low as to be practically negligible ($300 per subject and per year, maximum $1,500 per year). State education is virtually free of charge. Living accommodations, provided by the universities, are not entirely satisfactory although meals are adequate and modestly priced at the university restaurants.

The total cost of education varies considerably from one institution to another, even though all of the institutions are supported almost entirely by the State.

State funded budgets are calculated according to the number of students enrolled in the school, taking into account the institution's degree of development as well as its research and development programs.

IV - Some indicators

Tables 1 to **5** show the extent of facilities and human resources in education and give an idea of teacher students ratios, requirements for enrolment, number and distribution of candidates for higher education, and the role of agricultural instruction in secondary education as a whole.

Mention should be made of successful efforts toward finding a proper balance between enrolment and graduation conditions in the light of limitations imposed by the labour marketplace.

V - Major problems in higher agricultural education

1. Higher agricultural education, like all higher education in general, must make a serious effort to prepare qualified personnel. Portugal has a very poor showing when it comes to the availability of senior technicians. At the same time, given the structural base of Portuguese agriculture (out of a total of 788,144 farms, the average amount of land in use is 5.6 hectares; 8.6% of the farms have less than five hectares, and 44.6% less than one hectare), the possibilities of the market are weak.

2. Over the next five years, Portugal must at least triple the number of graduates per 1,000 of the work force, in order to manage the training capacity necessitated by educational and technological innovation. It follows that coordination must be achieved between training and employment - probably by diversification of employment options with the goal of satisfying future demands.

3. Diversified training at the level of higher agriculture education conjures up the spectre of competitiveness, which could justify efforts exerted toward satisfactory development of the primary sector as well as increasing yields for the Portuguese farmers and/or their associations.

Agricultural preparation prior to entry into higher agricultural education (professional and career-oriented channels) is available throughout the country. This activity is of great interest for the training of highly knowledgeable farmers.

4. Portugal has opposed longer training at the higher education level, with the appearance on the market of a demand for technicians holding the bachelor's degree (higher agricultural schools qualified for positions that emphasize applied knowledge and thus able to contribute more rapidly to the adoption of modern production methods.

5. The requirements are such that we would do well, at the first cycle training level, to plan for generalized training, suitably supported by a basic preparation period. This ought to cover at least 25% of the five years needed for a *Licence*. In order for the supply/demand "turnover" of the *licence* candidate to slow down during this phase of evolution, a minimum of five years is desirable. A high degree of specialized training at the level of the first academic degree, particularly at the university, does not allow for much professional mobility and it also blocks avenues to other job opportunities in the professional world.

6. The first training cycle in higher agricultural education is thus properly rounded out with the two academic degrees in question, generalized training at this level being justified in certain instances.

7. By adopting a policy of awarding the master's degree, diplomas of higher studies, or other degrees, the second training cycle should opt for consolidating specialized preparatory training.

8. The Portuguese system seeks, through the university, responsible scientific development matched to the level to be attained in the country's technological development.

The university is not exclusively a research establishment, but any such work should be conducted on a cooperative basis. Some countries entrust the major share of basic and strategic research to specialized operational bodies or institutes. This explains why the higher education system entails a dual role performed by teaching personnel: the latter occupy positions both in university departments and research institutes (1986 OECD report, *Role and functions of universities*). We are thus on the way to installing, on the same campus, scientific parks or centers of excellence involved with high quality training while at the same time providing the decisive support needed for modernization of development.

In our opinion, adapting the system to the evolution of the educational mission in the face of real situations will constantly steer the university more and more in the professional direction via the differentiated preparatory and training cycles (first, second and third cycles of studies).

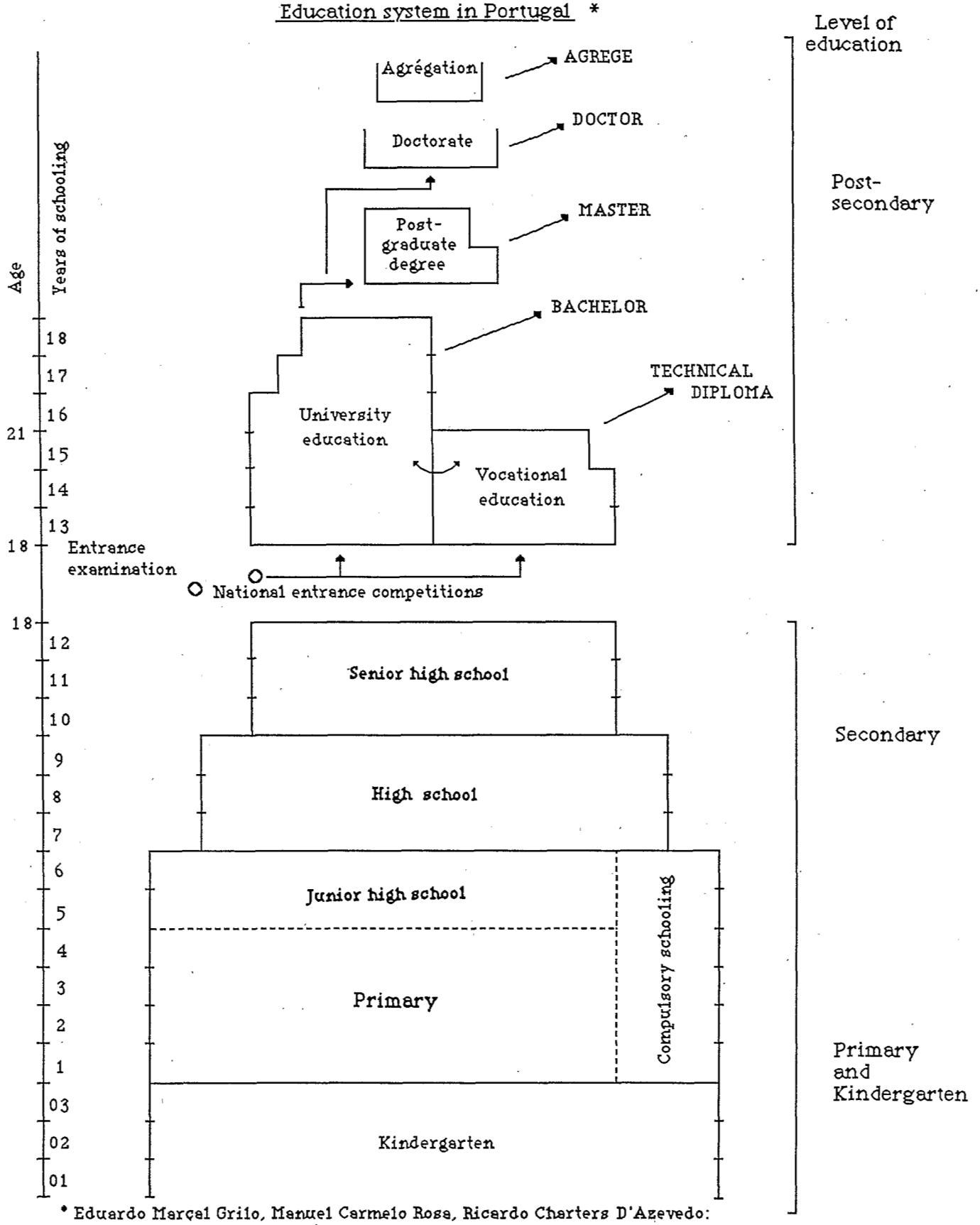
9. While it does not have all the final answers, the higher agricultural education system in Portugal is designed to meet the challenges it confronts, with a forward-looking vision that emphasizes the development of the primary sector. The system displays a diversity of training opportunities, a healthy dash of competition in professional activity, and complementary interaction between prevailing concepts having to do with full use of all available training facilities.

The sure way to revive Portuguese agriculture, so that it may emerge from the doldrums into which it has drifted, is to prepare and train the greatest possible number of people in the best possible way. There are risks to be taken but they are worth it. The issue is education/training for professional activity in all its ramifications.

Annex

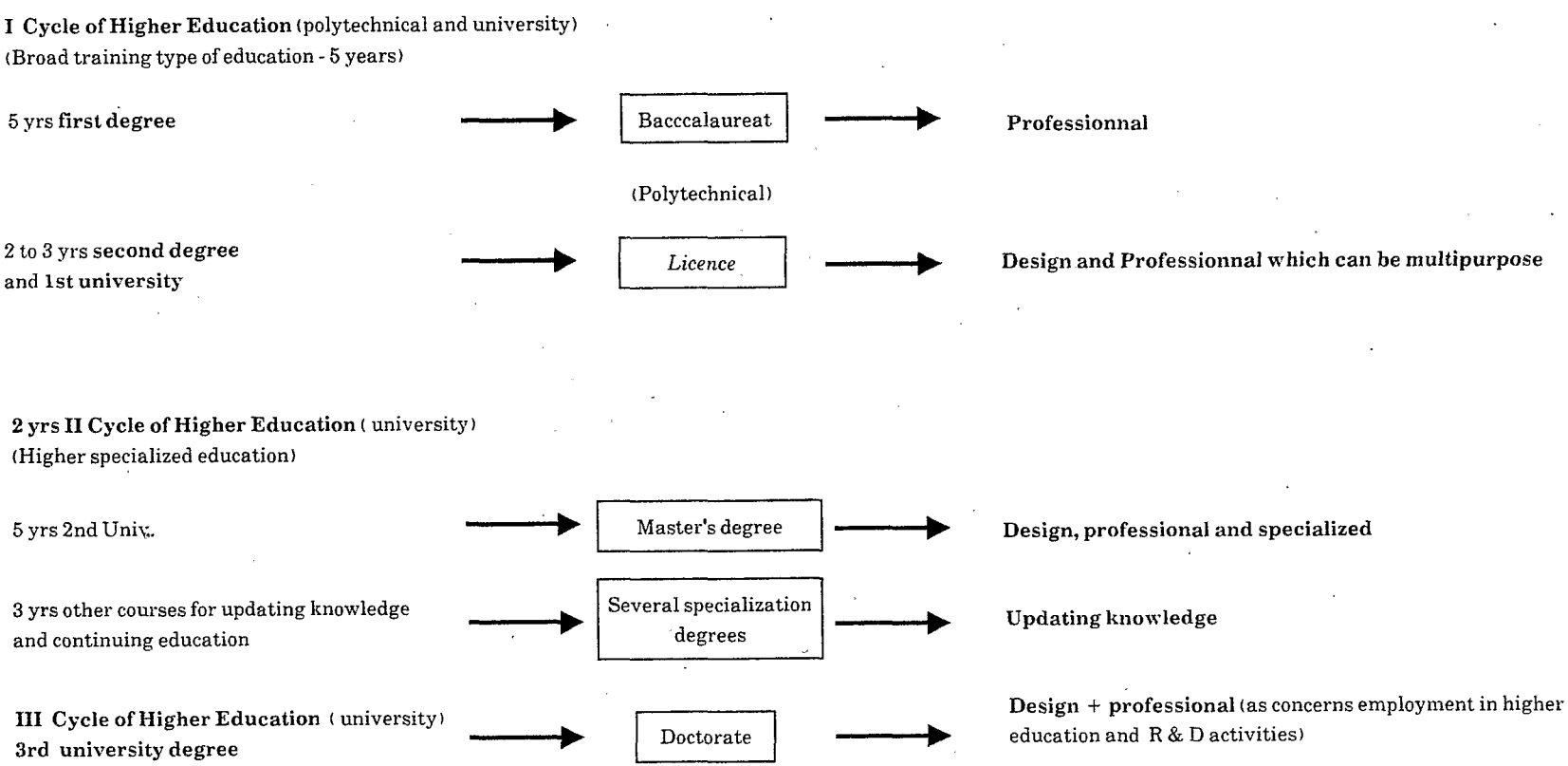
Tables, figures and map

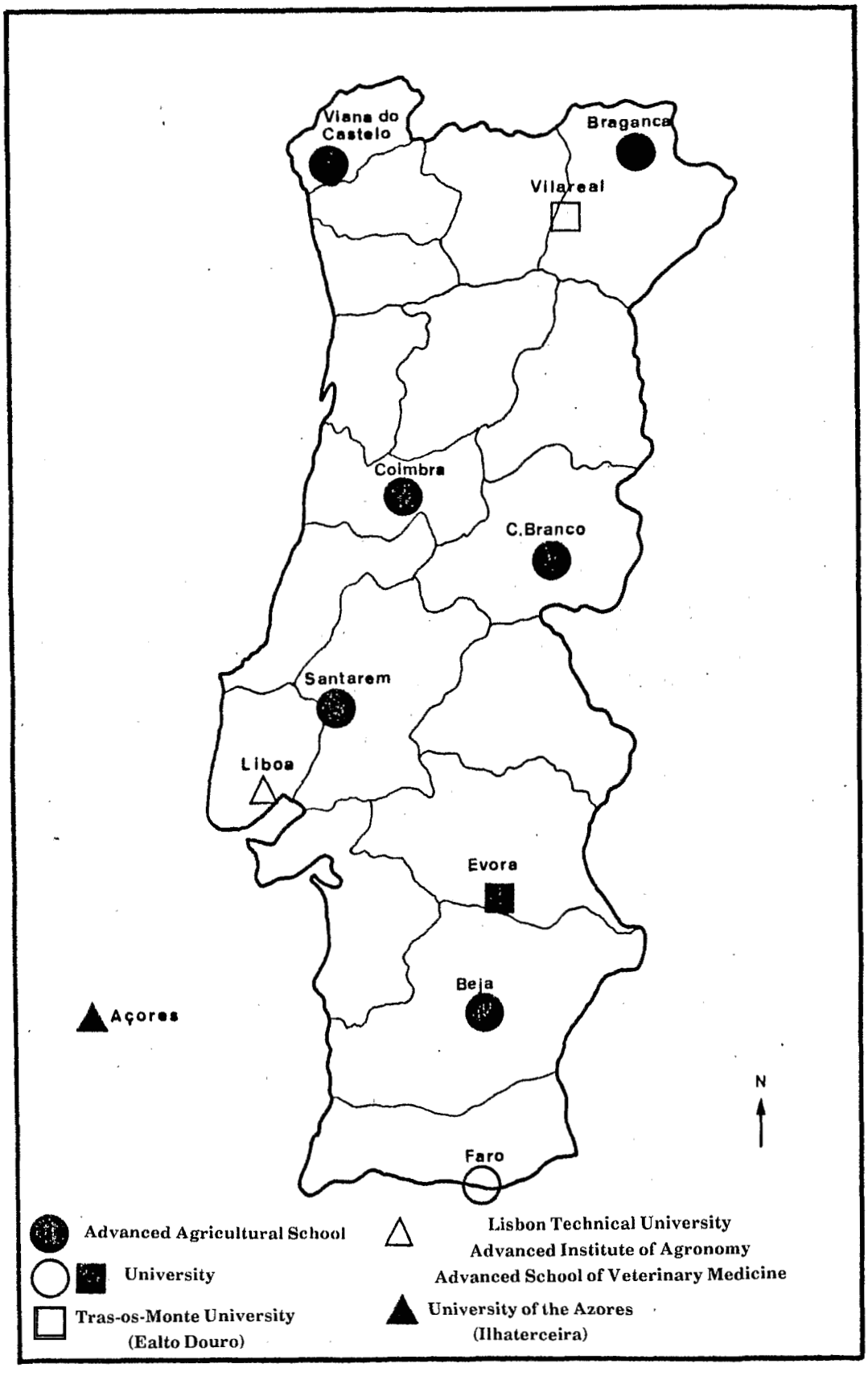
Figure 1
Education system in Portugal *



* Eduardo Marçal Grilo, Manuel Carmelo Rosa, Ricardo Charters D'Azevedo: *Guide d'Enseignement supérieur*. Mem Martins: Publications Europa-América, 1985

Figure 1a : Length (minimum) of cycles and degrees awarded




Viana do Castelo
Braganca
Vilareal
Coimbra
C.Branco
Santarem
Liboa
Evora
Beja
Açores
Faro
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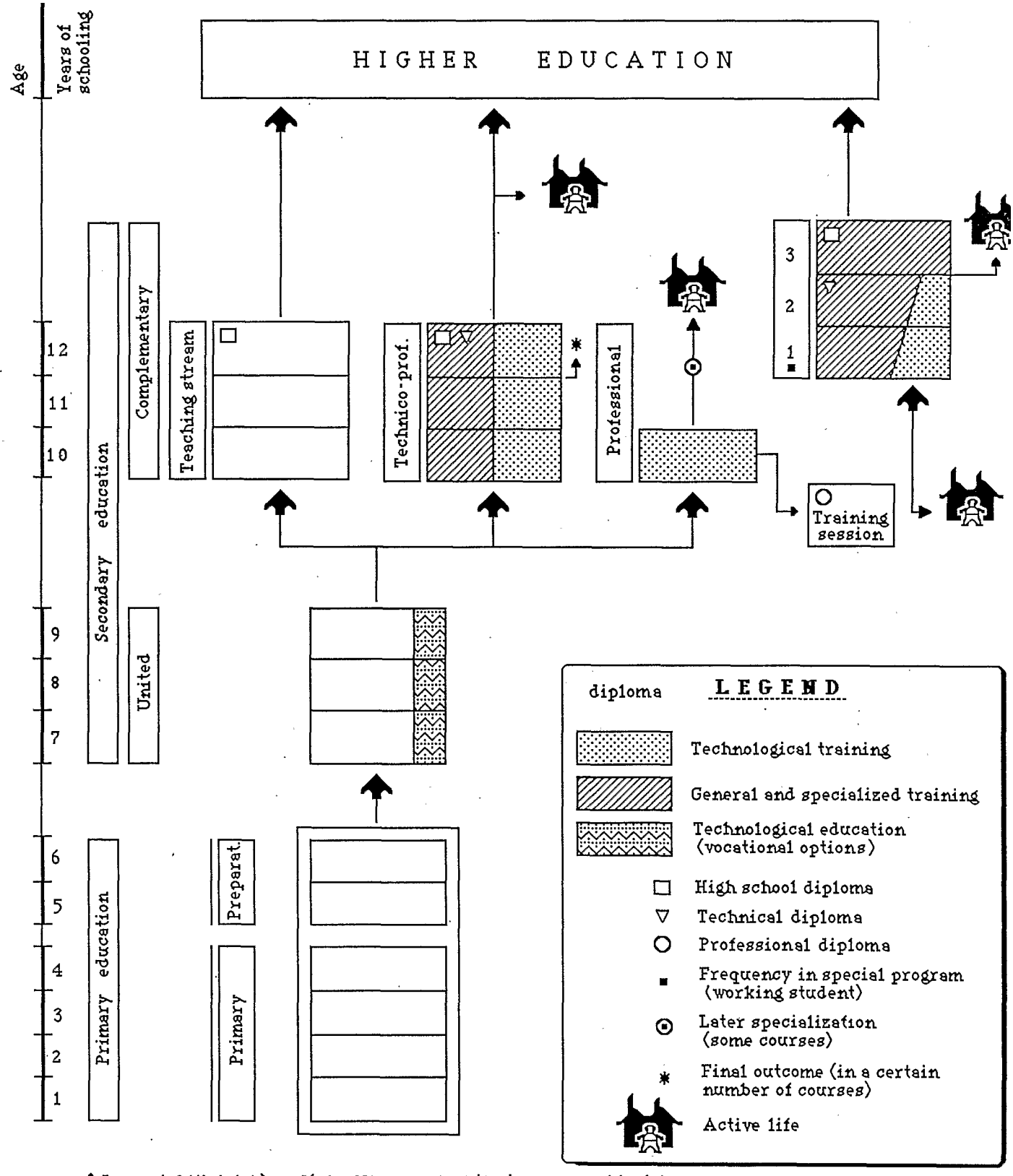
Advanced Agricultural School
University
Tras-os-Monte University
(Ealto Douro)
Lisbon Technical University
Advanced Institute of Agronomy
Advanced School of Veterinary Medicine
University of the Azores
(Ilhaterceira)

Figure 2
Technico-professional and professional programs



* Journal Officiel 1ère. Série, Nº 243 of 21/10/1983, p. 3668 (5)

Institution	Type of university degree	Length of course (years)	Averages			Number each year	Number of graduates	Number of students
			Students	Professors				
				Doctorates	Non Doctorates (assistants)			
Advanced School of Veterinary Medicine (1830)	*Licence*	5	466	23	48	6-7	16	75
Advances School of Agronomy (1864)	4 *licences* with several options	5	1264	54	136	6-8	146	124
University of Evora	"	5	863	25	58	9-11	68	44
I.U.T.A.D.	"	5	700	15	75	7-8	36	23
Agrarian Science Department University of the Azores	"	5	155	2	34	4-5	34	5
Advanced Agriculutral School of Coimbra	*Baccalauréat*	3	185	5	33	4-5	35	131
Advanced Agricultural School of Santarém	"	3	331	6	34	8-9	55	14
Advanced Agricultural School of Castelo Branco (1981)	"	3	150		39	3-4	35	5
Advanced Agricultural School of Bragança	"	3						
Advanced Agricultural School of Beja	"	3	46	1	9	4-5	22	

Table 1

Désignation de l'Institution	Entrance classification (out of 20)				Number admitted per year 1986/1987
	General	Regional	Professional	Technico-Professional	
University Higher Education					
- Advanced School of Veterinary Medicine	15.7				60
- Higher Institute of Agronomy	14.3				146
- University of Evora	13				68
- University of Tras-os-Montes e Alto Douro	13.3				36
- University of the Azores	12.4				34
Advanced polytechnical training					
- Advanced Agricultural School of Santarem		11.7	13.1	13	55
- Advanced Agricultural School of Coimbra		11.8	13		35
- Advanced Agricultural School of Castelo Branco	12.5	10.7	13		35
- Advanced Agricultural School of Beja		10.9	11.8		22

Table 2

	Total (a)	Excluded (b)	(a-b)	Total *	1st course *	2nd course *	3rd course *	4 course *	5th course *	Total **	6th course **	7th course **	8th course **	Prep. year **	Total admitted	Total excluded
Total	24 824	108	24716	24421	12329	1966	8183	1672	271	96	16	0	80	199	13033	11683

Table 3 : Number of higher education candidates (1984/1985 academic year)

* : Academic

**: Professional

Note:
Access to higher education courses in agriculture is by the first course of the 12th year (academic) and the 6th, 7th and 8th courses of the 12th year (professional)

Continent, Azores, Madeira	Official programs		
	Candidates	Places available	Places occupied
Total number of candidates	24,716	13,033	12,788
University of the Azores			
Agronomic sciences	*	31	30
University of Evora			
Architecture and Environment	*	22	21
Agricultural engineering	*	60	59
Biophysical engineering	*	10	10
Zootechnological engineering	*	60	60
University of Algarve			
Horticulture and fruits	*	20	20
Lisbon Technical University			
Advanced School of Veterinary Medicine	*	61	60
Advanced Institute of Agronomy	*	140	140
University of Tras-os-Montes e Alto Douro			
Agricultural engineering	*	30	30
Forest engineering	*	30	29
Zootechnological engineering	*	30	29
Advanced Agric. School of Coimbra			
Agricultural production		30	29
Animal Production	*	15	14
Advanced Agric. School of Santarém			
Agricultural production	*	31	31
Animal Production	*	31	31
Advanced Agric. School of Castelo Branco			
Agricultural production	*	30	28
Animal Production	*	30	29

Table 4: Higher education candidates (1984 - 1985)

	Public courses			Private courses			Total continent Azores Madeira
	Continent	Azores/ Madeira	Total cont. Azores/Madeira	Continent	Aores/ Madeira	Total Cont. Az. Mad.	
12th year (General)							
Total							
HF	23,221	897	24,118	8,279	429	8,708	32,826
H	9,874	322	10,196	3,828	142	3,970	14,166
1st course							
HF	10,564	447	11,011	4,100	141	4,241	5,252
H	5,437	210	5,647	2,114	65	2,179	7,826
12th year (professional)							
Total	452	4	456	-	-	-	456
HF	195	4	199	-	-	-	199
H							
"Agriculture, sylviculture and fisheries program" (6th, 7th et 8th course)							
HF	74	-	74	-	-	-	74
H	54	-	54	-	-	-	54

Table 5 : Complementary teaching (1983 - 1984)

Note: The technico-professional courses began in 1983 - 1984