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PURDUE UNIVERSITY INSTITUTE
DEVELOPMENT PROGRAM

Consultant's Report of

DENNIS V. JOHNSON

7919 Bellfort Avenue

Houston, Texas 77061

January 2 - March 3, 1982

INTRODUCTION

This consultant's report summarizes the activities, findings, and recommendations during a two-month assignment (January 2 - March 3) at the Universidade de Evora, during which I served as a technical advisor in the area of land use planning and regional development. The assignment was carried out under the AID-supported Portugal University Institute Development Program. Professor Eduardo Cruz de Carvalho served as my counterpart at the Universidade de Evora and provided orientation of the activities within the university and facilitated contact with other public agencies in Evora and Lisbon.

Activities for the two-month period are summarized on a weekly basis in Appendix A. The work-plan written in advance to justify the consultancy is provided in Appendix B.

GENERAL OBJECTIVES

The general objectives of the consultancy were as follows:

1. Provide assistance to faculty and technical staff of the Universidade de Evora and allied public agencies in Evora and Lisbon concerned with the overall subject of rural land use planning and its relevance and relationship to regional development. This objective was met through numerous formal and informal meetings and discussions concerning completed projects, projects under way, and projects in the planning stage. Special emphasis was placed on resources available for land use planning and how they could best be utilized, and on methodologies tailored to particular projects. This interaction took place both in the office and during field visits in the company of technicians who had done or were doing project work. The exchange of technical information dealt with both small-scale efforts (i.e. the entire Alentejo) to develop a new method of zonation for planning purposes, and large-scale

efforts (i.e. the local area including individual properties) in relationship to the agrarian reform program and its implications in terms of more productive use of land. These latter discussions included a methodology to be employed in a pilot study at the farm level.

2. Organize and participate in an inter-agency Workshop at the University dealing with techniques and methodologies for zonation and rural land use. This took place on February 12 (see Appendix A) and consisted of presentations and group discussions of projects done by different agencies. The effectiveness of different methodologies to serve different needs was considered. An equally important value of the Workshop was the opportunity it afforded for technicians from the local agencies to become personally acquainted and to share insights into some of the problems they faced in land use planning.

3. Organize and present a university seminar on the topic of "Ordenamento do Espaço e Desenvolvimento Regional," in Portuguese. The seminar was presented on February 26 (see Appendix A) and was attended by both the technicians who had participated in the Workshop and interested faculty and students from the university. Recommendations were made concerning further work on small-scale zonation and the creation of minimal rural land use planning units, land use planning at the local level, and the establishment of a centralized data bank for the furtherance of land use planning and regional development.

4. Assess the local data resources in terms of maps, aerial photographs, technical reports, etc., and how they might be better utilized on an inter-agency basis to serve the needs of land use planning and regional development in the Alentejo. Part of this assessment involved human resources and the level of internal organization within agencies.

AGENCY AND PROFESSIONAL CONTACTS

Evora

Universidade de Evora:

E. Cruz de Carvalho, Pro-Reitor
Departamento de Planeamento Biofísico e Paisagístico

Fernando Pessoa, Chairman

Alexandre Cancela d'Abreu

Adalgisa Palmeiro

Programa de Estudos de Ordenamento Rural do Alentejo

F.J. Nobre Pandega

Elias R. Candeis

João Pereira Lopes

Departamento de Ecologia

José M.P.B. de Mascarenhas

Departamento de Geociencias

Mariano Feio, Chairman

Departamento de Fitotecnia

Silva Carvalho

Comissão de Coordenação da Região do Alentejo:

A.J. Carmelo Aires, Presidente

Direcção de Serviços e Programação

F. Lopes Figueira, Director

Rosário Ramalho

Lina Jan

Lusitano dos Santos

M.C.A.P., Direcção Regional de Agricultura:

Pestana de Vasconcelos, Vice Director

Gabinete de Planeamento

Paes de Carvalho, Director

João Miguel de Freitas

Luis Silva

Direcção Geral de Hidraulica e Engenharia Agrícola:

Alentejo Soil Conservation and Drainage Project (PNUD)

I. Abu Sharr, Chief Technical Advisor

Denis Sims

World Bank:

Joaquim Dordio, Director

Peter Barrow

Lisbon

USAID:

Don Finberg, Representative
Charles A. Buchanan, Project Manager
José Luis Pinheiro

USDA:

Glen Purnell, PROCALFER
James Black

Ministério de Comércio, Agricultura e Pescas:

Gabinete de Planeamento
Pedro Nascimento
Instituto Gestão Estruturação Fundiária
Martins Pedro

TECHNICAL DISCUSSION AND RECOMMENDATIONS

The Alentejo, the portion of Portugal south of the Tejo, has distinct advantages in land use studies and regional development planning over the North, because of the adequacy of baseline data in the form of maps. Map coverage is extensive and virtually complete in all of the series which have been started. There exist numerous small scale regional maps at a scale of 1:500,000 and smaller; intermediate scale maps at 1:200,000 and 1:100,000; and large scale maps ranging from 1:50,000 topographic series and soil types and capability, to cadastral maps showing individual holdings at scales of 1:5,000 and 1:2,000. Combined, they provide essential base maps for a full range of studies (see Univ. de Evora, n.d. and CCRA, 1981).

Complementing these map series are standard vertical black and white aerial photographs at scales ranging from 1:30,000 to 1:15,000, taken over the period 1958-1980, chiefly by the Serviço Cartográfico do Exército and the Instituto Geográfico e Cadastral. Unfortunately, aerial photograph holdings in Evora have not been completely inventoried and catalogued for maximum utilization. This is of particular concern since the acquisition of photographs is expensive and takes several months. The remote sensing satellite coverage is not known.

A recent zonation study of the Sul do Tejo (Univ. Evora, 1979) is an initial phase in delimiting spatial units on the basis of physical characteristics (topography, soils, and natural vegetation) combined with existing agroeconomic systems, to provide a more ecologically-derived land use/planning characterization. The methodology employed began with field observations of actual conditions, rather than with the more common approach of utilizing existing maps. This technique was devised to avoid the strong influence exerted on researchers by published maps and the repetition of errors incorporated in virtually all spatial representations of the rural landscape. The study consists of a map and an accompanying description of the spatial units.

After delimitation of six major regions south of the Tejo, the study focuses on the core region, the Planície Alentejana. This core is representative of both the popular and more systematic concept of the Alentejo. The Planície Alentejana is further broken down into three subregions: Planície Central (the area surrounding Evora), Terras Fortes (lands lying to the north and south), and Xistos do Guadiana (lands lying to the east and far south). Each of the subregions was subsequently broken down into zones, a total of twenty-one being designated.

Based as it is on the fresh start of new field surveys, the zonation scheme creates interrelated spatial units which represent physical conditions and agricultural exploitation patterns. Close examination of the map and accompanying text, and the opportunity afforded by field surveys over the Alentejo in the company of the technicians who conducted the research, permitted the formulation of the following recommendations which should be considered in the second phase of the study:

1. The zone surrounding Evora (Zona Desaborizada) is not nearly as clearly distinguished as others within the Planície Alentejana. The landscape differences between that zone and the one lying to the northwest (Zona Transição para Charneca), and the one lying to the south (Zona Plana e Desabitada), are very subtle and difficult to discern. Such is not the case between the Zona Desaborizada and the Zona Acidentes de Monfurado to the west, and the Zona Granitos sob Montados to the east. I suggest that two means of improvement be considered. One, to eliminate completely the Zona Desaborizada by moving the boundaries of the zones to the northwest and south until they meet. Two, to diminish the area of the Zona Desaborizada to the lands directly under the influence of Evora, and adjust the boundaries to the northwest and south accordingly. Additional field surveys will be necessary to effect such changes.

2. Once the above adjustments have been made, it is recommended that the regional, subregional, and zonal boundaries be refined by the use of aerial photographs and possibly remote sensing satellite imagery. Field observations from the ground do not permit the researcher to see the entire length of a particular boundary. To carry out this suggestion it would only be necessary to examine aerial photographs of the boundary areas themselves, not of the entire Alentejo.

3. Following the recommended refinements above, the zonation scheme requires further modification to make it more useful for land use/planning purposes. This step involves the adjustment of all boundaries to coincide with some order of administrative limit. Although administrative boundaries are almost always drawn in an arbitrary manner and seldom follow natural landscape divisions, they nevertheless must be considered because of their jurisdictional and

statistical significance. Using natural regions alone, it becomes virtually impossible to calculate their agroeconomic significance because data cannot be broken down below the smallest statistical unit. Making such adjustments distorts natural boundaries but that disadvantage is acceptable when compared to the advantages realized for planning purposes. The ideal solution to this problem is to adjust administrative boundaries to coincide with natural boundaries, but until that can be done the reverse is recommended.

Poland provides a good comparison to the Alentejo for land use planning purposes. It has a rolling, uniform topography, intensive production of small grains, and a land tenure pattern representing a complexity of state farms, collective farms and private farms. Poland also has a problem of parcelization of private farms into noncontiguous, subeconomic units of production. Kostrowicki (1972) in his study of agricultural regions in Poland, suggests that agricultural regions coincide to the equivalent of distrito boundaries, subregions to concelho, and zones to freguesia boundaries. I recommend that this methodology be followed for the Alentejo with certain modifications. Therefore, regional boundaries should follow distrito limits wherever possible, but where this would cause major distortion, concelho limits be used. At the subregional level, concelho boundaries should be followed except in the case of gross distortion where freguesia limits should be used. At the zonal level, freguesia boundaries should be followed exclusively.

The result of these modification will designate spatial units within which a majority of the land area is homogeneous in terms of physical and agricultural conditions, and which will also match administrative boundaries to increase their utility for planning purposes.

4. Larger-scale zonation is needed in the Alentejo for more

detailed planning and research. I recommend the creation of subzones for this purpose, within the framework of the zonation scheme just discussed. Subzones can be created by grouping contiguous freguesias which are homogeneous in terms of agricultural production systems. Approximately three freguesias should comprise each subzone; the number may vary depending upon the size of the freguesias and the complexity of agricultural activities.

Once designated, the approximately 60 subzones in the Planície Alentejana can be characterized in detail as to cropping and livestock systems, soil types, land tenure, etc. It would then be possible to measure the level of productivity of each subzone by calculation of the amount of area of each major soil type and determine if lands are being utilized for the highest productive purpose. In this manner, it would be possible to rank the subzones by means of an index of utilization and identify those where the greatest return can be expected in programs such as increasing wheat production. To complement the creation of subzones, it would be necessary to modify the current agricultural typology used in the Alentejo to serve the greater detail demands.

Delimited and described, the subzones can serve as basic spatial units for planning, collecting statistics, and regional development. Within subzones, it is possible to define the severity of problems such as poor drainage and severe erosion, and develop an index of environmental degradation to be used to rank subzones so that remedial programs can be targeted to the areas of greatest return. Studies of particular crops can be carried out through the use of linear sampling across subzones without the necessity of enumerating the total land use. Surveys of pasture resources can also be done at this level, following the methodology suggested by Viktorov (1964). Subzones could serve as units within which agricultural limestone resources

could be surveyed and exploited. The subzone unit also has potential for economic analysis by using linear programming models to predict the benefits and costs of proposed changes to the existing systems (see Silva and Baptista, 1980).

Yet another use of subzones involves the selection of locations for farm trials of new technologies and the testing of new varieties of crops or pasture grasses. Given the distinct character of each subzone in both environmental and agricultural terms, selection of a small number would provide the range of conditions represented in the Alentejo.

Using the more detailed agricultural typology to be developed, new land use maps of the Alentejo could be compiled, if desired, at the subzone level, by means of the parcelle technique. In parcelle mapping, a geometric grid is placed over the study area and each square classified on the basis of a predetermined coding system. If more than one crop or land use occurs within a quadrat, combinations are used until at least 75 percent of the area is accounted for. This level is generally accepted as being adequate (Lounsbury, 1979)

Centralized Data Bank

To support the work in zonation to the level indicated above, and to facilitate regional development in general, it is recommended that a centralized data bank be established in Evora. Each of the several local agencies, large and small, has a collection of maps, aerial photographs, studies, reports, etc., which have been used in and been acquired in the process of preparing special studies and planning documents. Each agency has a fairly good idea of the resources at hand within their walls, but their knowledge of resources in other agencies is fragmentary.

The establishment of a centralized data bank could proceed in

the following sequence:

1. Each agency could prepare an inventory of their maps, aerial photographs, studies, reports, etc. In each instance, the particular location in the Alentejo related to the data should be recorded. For maps this would include the latitude and longitude of the area covered; for aerial photographs, the approximate latitude and longitude of the center-point of the photograph.

2. Preparation of an integrated inventory listing all of the materials and the agencies which hold them. This inventory should be organized according to the 1:50,000 scale topographic map series, using the latitude and longitude limits for each of the sheets as reference points. Since each of these map sheets is named, that designation can be used to divide the listing into headings. By devising this manual system according to specific coordinates, the stage is set for subsequent computerization of the data.

3. Establish an inter-agency agreement whereby materials in the data bank may be borrowed for set purposes and set periods of time. This type of cooperation has a twofold value in that it makes local data resources more available and it fosters cooperation between agencies engaged in similar types of studies for slightly different purposes.

4. Establish a system whereby the centralized data bank would be updated on either a quarterly or semiannual basis as new data is acquired. The coordinating agency could then issue a supplement to the original inventory issued as a result of item 2.

Atlas do Alentejo

The Departamento de Planeamento Biofísico has prepared in draft form a series of twenty-five general purposes maps at a scale of 1:500,000 of the Alentejo (see appendix C). This collection repre-

sents a valuable resource for planning at the regional level and some means should be found to have the sheets edited by a geographer and published as an atlas. If possible, the second phase map of the zonation study discussed above could be incorporated into the atlas.

ADMINISTRATIVE RECOMMENDATIONS

Based upon extensive interaction with the Universidade de Évora and the Comissão de Coordenação da Região do Alentejo, and some familiarity with other agencies in Évora and Lisbon involved with land use planning and regional development, I offer the following administrative recommendations as to the implementation of the above technical suggestions.

Point one (page 6) can be accomplished with the personnel of the P.E.U.R.A. who worked on the first phase of the project, once again under the orientation of Professor Cruz de Carvalho. This could be accomplished in no more than one month. It is essential to move quickly while the same individuals are available, since they are not regular employees of the university, but supported by outside funding ;their continued availability cannot be assumed.

Point two (page 6) will require technical assistance in aerial photograph interpretation. Dr. José Branco de Mascarenhas of the Departamento de Ecologia, who has in late 1981 completed a doctorate in France working with this subject, would be an ideal person to complete this task. An added advantage of carrying out this work within the university is that the Departamento de Geociencias has the most extensive holdings of aerial photographs in Évora. Working with available data, it would require approximately two months of technical effort, with cartographic support, to conclude the refinement of the natural boundaries. Providing that remote sensing imagery could be obtained or gained access to, it could be used to supplement

the standard aerial photographs.

Point three (page 6) to be dealt with upon the completion of points one and two, requires professional geographic assistance to determine the movement of spatial unit boundaries to coincide with administrative limits. Here I believe that the Comissão could enter in and provide the assistance of Lina Jan, a geographer, who has the training and experience to make such determinations. This modification would require about one month of effort.

Point four (page 7), to follow, is more involved since it deals with the designation of subzones and the design of a modified agricultural typology to support the ends to which the subzones will be put. This task should involve interaction with other agencies for inputs, but could best be centered in the Comissão which has the necessary resources and technical support. The services of a short-term consultant are recommended at this stage, for a period of about two months.

With regard to the recommendations concerning the Centralized Data Bank, this activity should be centered in the Comissão. Points one through four (page 10) would require a total of about five months, two-three months assumed to be required for agencies to respond to the inventory requested. During the latter phase of this project, it is assumed that the short-term consultant would be in place and available to offer technical assistance in planning the manual system and its compatibility to a subsequent computerized operation.

Concerning the Atlas do Alentejo (page 10) this activity could remain within the University as far as the editing and final preparation. I suggest that Professor Mariano Feio be engaged as editor. No geographer knows the Alentejo better than he does. Should it be possible to include the revised zonation map (page 11) the short-term

consultant could work with Professor Feio on that sheet.

It is recommended that the short-term consultant be based in the Commission and work with university personnel as indicated.

POSSIBLE PROBLEMS

It is assumed that outside funding will be provided by AIB or another agency for a minimum of the short-term consultant costs and the printing of the Atlas do Alentejo. Both the University and the Commission have the technical personnel to carry out the bulk of the work. I foresee no problems in completing a revision of the zonation study of the Alentejo. Design of a new agricultural typology for broad usage will require some trade-offs among various agency requirements, but these can be resolved without diminishing the quality and effectiveness of the classification.

Establishment of a Centralized Data bank will require that local agencies be convinced of the benefits each will derive from taking part. To facilitate the development process, it would be advisable to form a committee composed of one representative from each of the participating agencies, with the Commission representative serving as the chair. A half-day workshop could be organized at the Commission to give instructions as to the inventory procedure of data resources. The most serious anticipated difficulty in establishing the data bank involves the design of a borrowing-lending system which will assure that materials are returned within a reasonable time and in good condition. With the support of the overall concept from participating agencies, especially by the technicians, this should be overcome. Eventual computerization of the data bank should be approached in a flexible manner. For instance, there is no reason why the Commission could not maintain the data bank via a terminal linked to a computer housed in the university.

The only difficulty foreseen in completion of the Atlas do Alentejo will be in arranging for printing and binding in Lisbon.

RESEARCH NEEDS

No concerned consultant can resist the opportunity to offer suggestions as to research needs. I shall limit myself to two subject areas.

1. Native and naturalized pasture grasses and forbs are not sufficiently known to permit the systematic development of programs to improve pasturage. Most of the species are botanically known, but their growth rates, frequency of occurrence, and nutrient requirements have yet to be studied. Although subterranean clover is heralded as the key to solving the problem of low carrying capacity, management practices developed for plant communities which occur under different conditions in the Alentejo could yield better and less expensive results.

2. Tree crops including olives, cork oaks, and azinheira have been a part of Alentejo agriculture for centuries. There has evolved an agroforestry system of cultivating cereals or pasture between rows of the trees. This system is one which is being recommended in many parts of the world as a means of reclaiming degraded land and of retarding erosion. Virtually no research has been conducted to maintain and improve these tree-based systems in the Alentejo. Potential does exist for improvement of productivity, and for greater utilization of the products. Linked to agroforestry research is consideration of improved systems of forestry management of native pines (pinheiro manso and pinheiro bravo) and eucalyptus. New species of the latter show encouraging results. Contrary to the popular malignment of the eucalyptus in Portugal, there is no scientific evidence why it should not be encouraged in areas of poor soils.

SUMMARY OF ACTIVITIES

Week #1 (January 4-9):

Orientation meeting at AID office Lisbon with Donald Finberg.
Project orientation meeting at Univ. de Evora with Cruz de
Carvalho and technicians of Ordenamento Program.

Review of Ordenamento resources (maps, air photos, reports,
etc.) and planning of four field surveys.

Meeting with Mariano Feio, Geociências Dept., Univ. de Evora.

Meeting with Reitor Ario Azevedo.

One-day field survey east from Evora with 3 technicians.

One-day field survey west and northwest from Evora with
2 technicians.

Background review of documentation on Alentejo agricultural
geography.

Week #2 (January 11-16):

Visit to Comissão de Coordenação da Região do Alentejo to
meet Carmelo Aires and review their activities. Also
reviewed map and air photo collections with technicians.

Visit to World Bank office to meet Peter Barrow and discuss
planning implications of investment credit program; also
reviewed their map and air photo collection.

Visit to AID office Lisbon to discuss project with Charles
Buchanan.

Visit to Min. of Agriculture, Gabinete de Planeamento in Lisbon
to discuss agricultural planning and zonation in the Alen-
tejo with Pedro Nascimento.

Meeting with Fernando Pessoa, head Dept. de Planeamento Bio-
física e Paisagístico, Univ. de Evora, regarding faculty
interest in Ordenamento.

Reviewed activities of Banco de Dados de Ordenamento do Alen-
tejo at Univ. de Evora with technicians.

Continuation of review of documentation on Alentejo agriculture
and planning.

Week #3 (January 18-23):

Two-day field survey to far northeast from Evora with
3 technicians.

Reviewed map and air photo collection of Univ. de Evora.

Visit to CCRRA to meet Lopes Figueira and discuss Estremoz integrated rural development project and other current technical studies.

Visit to Direção Geral de Hidraulica e Engenharia Agrícola office in Evora to discuss Alentejo Soil Conservation and Drainage Project, under PNUD/FAO, and meet Denis Sims and I. Abu Sharr. Also reviewed their map collection.

One-day field survey to south and southeast of Evora, including Alqueva Dam site, with 3 technicians.

Review of documentation on agricultural typology of Alentejo.

Week #4 (January 25-30):

Visit to CCRRA to discuss critique of Estremoz project document.

Visit to Min. of Agriculture, Gabinete de Planeamento in Lisbon to meet again with Pedro Nascimento and obtain documents on projections of agricultural production of the Alentejo.

Visit to Min. of Agriculture, Instituto Gestão Estruturação Fundiária in Lisbon to review cadastral methodology dealing with agrarian reform; discussed same with Martins Pedro.

Meeting with Glen Purnell, USDA PROCALFER Project Leader regarding planning implications of the program and its impact in the Alentejo, especially with regard to agricultural limestone.

Visit to CCRRA to present critique of Estremoz project document to the technical team which prepared it. One-half day field visit to study site with Lopes Figueira and 2 technicians.

Week #5 (February 1-6):

Meeting with Cruz de Carvalho to review progress and to schedule technical workshop.

Visit to CCRRA to discuss methodology for second phase of Estremoz to be done at larger map scale.

Visit to Direção Regional de Agricultura to meet Pestana de Vasconcelhos and learn of zonation and planning activities.

Meeting with José Mascarenhas, Dept. de Ecologia, Univ. Evora regarding remote sensing applications for zonation in the Alentejo.

Meeting with Alexandre Cancela d'Abreu and Adalgisa Palmeiro of Dept. de Planeamento Biofísica to review their professional interest in Ordenamento and to view map series on Alentejo and large-scale Portela study.

Detailed planning for workshop and issuance of invitations to local technicians.

Surveyed meteorological data on Alentejo to assess possibility of using Hargreaves's Moisture Availability Index for more detailed climatological mapping.

Week #6 (February 8-13):

Luncheon meeting with Buchanan, Collom, Cruz de Carvalho and Lopes Figueira to discuss status of project.

Visit to Direcção Regional de Agricultura to meet with technicians in local Gabinete de Planeamento; obtained some information on regional planning objectives.

Personally visited each of invited workshop participants to discuss their roles and materials to be brought for examination by the group.

Reviewed all recent CCRA planning documents from 1970s.

Co-conducted one-day workshop on methodologies for rural zonation planning. Attendance: 14.

Week #7 (February 15-20):

Discussions with technicians in Ordenamento Program regarding methodologies for a pilot project at the farm level.

Reviewed document and methodology used on Alqueva Dam impact study by Univ. de Evora.

Meeting with Cruz de Carvalho to review progress and set date for seminar presentation.

Meeting with José Mascarenhas, Dept. of Ecologia, Univ. Evora regarding his interest in short-term visit to Purdue to learn techniques of remote sensing applications for planning.

Review of materials related to pros and cons of eucalyptus plantations, and environmental issue having agricultural planning implications.

Week #8 (February 22-27):

Visit to CCRA to discuss with technicians remote sensing applications and regional data needs.

Reviewed documentation and discussed national parks program and its impact on Alentejo land use planning.

Preparation for University seminar.

Review of relevant planning and regional development literature for inclusion in final report bibliography.

Presentation of University seminar on "Ordenamento do Espaço e Desenvolvimento Regional." Attendance: 18.

Week #9 (March 1-2):

Meeting with Donald Finberg, Steve Watkins, Cruz de Carvalho, Lopes Figueira, and John Sanders regarding project achievements and recommended actions.

Preparation of final report on consultancy.

Departure March 3 for United States.

WORKSHOP SOBRE METODOLOGIAS

DE ORDENAMENTO RURAL

12 de Fevereiro 1982, 0930-1230 ; 1430-1830

Sala de Reuniões (No 8)

Colégio do Espírito Santo

Organizado por: Prof. Eduardo Cruz de Carvalho
Dr. Dennis V. Johnson

Convidados:

Alexandre d'Orey Cancela d'Abreu

Maria Adalgisa Alves Palmeiro

Departamento de Planeamento Biofisica e Paisagístico
Universidade de Evora

Maria do Rosário dos Santos Ramalho

Lina Freitas Jan

Lusitano dos Santos

Direcção de Serviços de Estudos e Programeção
Comissão de Coordenação da Região do Alentejo

José Manuel Pereira Branco de Mascarenhas

Departamento de Ecologia

Universidade de Evora

João Miguel de Freitas

Luis Silva

Gabinete de Planeamento

Ministerio de Comércio, Agricultura e Pesca

Elias Ribeiro Candeias

F.J. Nobre Pandega (Ramalho)

João Fernandes Pereira Lopes

Programa de Estudos de Ordenamento Rural do Alentejo
Universidade de Evora



Ministerio da Educação e Ciencia



ORDENAMENTO DO ESPAÇO
E
DESENVOLVIMENTO REGIONAL

Apresentado por: Dr. Dennis V. Johnson

Local: Palácio da Inquisição
Sala nº 5 (2º Andar)

Dia 26 de Fevereiro de 1982 (Sexta-feira)

Às 16 horas

JUSTIFICAÇÃO E PLANO DE TRABALHO

- I. Justificação do estabelecimento do Programa de Estudos de Ordenamento Rural do Alentejo (P.E.O.R.A.)
 - A. A cerealicultura extensiva criadora da monotonização/uniformização da paisagem alentejana, com as lamentáveis consequências de:
 - subuso das áreas passíveis de intensificação agrícola ou agropecuária;
 - sobreuso das áreas "sensíveis", abrindo caminho a um processo de desertificação.
 - B. A zona de intervenção da reforma agrária coincide sensivelmente com a área de influência da Universidade de Évora e aqui passaram à posse do Estado as grandes e muito grandes explorações, totalizando cerca de 1.000.000 de ha.
 - C. De A se conclui da necessidade e urgência de ordenamento ou planificação do uso da terra; e de B das possibilidades de intervenção Estatal e da Colaboração da Universidade no estabelecimento de proposta de normas de utilização do espaço e de sistemas agrícolas adequados ao desenvolvimento regional.
- II. Proposta de participação do Dr. Dennis Johnson neste Programa durante a sua estadia em Portugal (8 semanas)
 - 1ª Semana
 1. Dois ou três dias de encontros informais com os vários docentes e técnicos, da Universidade de Évora e da Comissão de Coordenação da Região do Alentejo (CCRA), ligados ao problema do Ordenamento do Espaço (P.E.O.R.A.), para se poder inteirar e integrar nos trabalhos em curso.
 2. Participação activa num workshop de 2 dias sobre objectivos, princípios metodológicos e técnicas de Ordenamento da Utilização do Espaço Rural.
 - 2ª Semana à 7ª Semana
 1. Trabalhos de campo e gabinete visando a análise crítica dos estudos e propostas de ordenamento em curso no âmbito de P.E.O.R.A., às escalas de 1:500.000 e 1:25.000, quer de análise biofísica quer de visualização geográfica da paisagem.
 2. Participação no estabelecimento de um project piloto de ordenamento sobre o terreno, à escala da unidade de exploração.

8ª Semana

1. Organização e orientação de um seminário para os alunos dos cursos de Agricultura Paisagista e Engenharia Agrícola sobre "Ordenamento do Espaço e Desenvolvimento Regional."

DEFINIÇÃO E CARACTERIZAÇÃO DAS UNIDADES BIOFÍSICAS

DA ZONA A SUL DO TEJO - Escala 1:500 000

1. RELEVO - FESTOS E TALVEGUES, CENTROS DE ENCONTRO E DE DISTRIBUIÇÃO, HIPSOMETRIA
2. RELEVO - DECLIVES DOMINANTES E OBSTÁCULOS FÍSICOS
3. RELEVO - GEOMORFOLOGIA
4. SUB-SOLO - GEOLOGIA E LITOLOGIA
5. SUB-SOLO - RECURSOS MINERAIS I
6. SUB-SOLO - RECURSOS MINERAIS II
7. SUB-SOLO - INTENSIDADE SÍSMICA
8. CLIMA - SÍNTESE DE CARACTERIZAÇÃO
9. SOLO - CARTA DE SOLOS
10. SOLO - EROÇÃO E EXCESSO DE ÁGUA
11. SOLO - CAPACIDADE DE USO AGRÍCOLA
12. ÁGUA - RECURSOS AQUÍFEROS SUPERFICIAIS
13. ÁGUA - RECURSOS AQUÍFEROS SUBTERRÂNEOS I
14. ÁGUA - RECURSOS AQUÍFEROS SUBTERRÂNEOS II
15. HUMANIZAÇÃO DA PAISAGEM - Utilização do solo
16. HUMANIZAÇÃO DA PAISAGEM - Povoamento tradicional
17. HUMANIZAÇÃO DA PAISAGEM - Habitat
18. HUMANIZAÇÃO DA PAISAGEM - Degradações ambientais decorrentes das actividades agrícolas
19. HUMANIZAÇÃO DA PAISAGEM - Degradações ambientais decorrentes de actividades urbano/industriais, marítimas, etc.
20. PATRIMÓNIO CULTURAL - Valores naturais I
21. PATRIMÓNIO CULTURAL - Valores naturais II
22. PATRIMÓNIO CULTURAL - Valores arqueológicos e arquitectónicos
23. FACTORES AMBIENTAIS RELACIONADOS COM ACTIVIDADES DE RECREIO E TURISMO
24. LEVANTAMENTO DE ESTUDOS E PROPOSTAS COM INCIDÊNCIA NO ORDENAMENTO DA PAISAGEM
25. DEFINIÇÃO E CARACTERIZAÇÃO DAS UNIDADES BIOFÍSICAS DA ZONA A SUL DO TEJO

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