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PHOTOGRAMMETRIC AND REMOTE SENSING EDUCATION AND
RESEARCH IN THE SOUTH-EASTERN MEDITERANEAN COUNTRIES

Prof. Dr. D.K. ROKOS
Department of Cadastre
Photogrammetry and
Cartography
University of Thessaloniki,
Greece.

Abstract

The main task of the WG VI-1 Subworking Group, on the Photogrammetric and Remote Sensing Education and Research in the South Eastern Mediteranean Countries, period 1980-84, is to continue the work and deepen and widen author's relevant contribution, presented during our 1980 Hamburg Congress. Author's conclusions and recommendations concerning: "a radical educational reform urgently needed in Greece, which will positively influence both Education and Research in Photogrammetry and R.S. "have now been dramatically confirmed after the Political Change of October 1981. Socialist Government of Greece promoted and the Parliament voted the revolutionary Law 1268/82 "for the structure and function of Higher Education "which came into force July 1982.

Special emphasis is given on the fundamental characteristics of this Law, as well as, on its direct and positive consequences, both on University in general, and P. and R.S. specifically Education and Research, seen from the point of view of a teacher of P. and R.S., who served as Secretary General of the Ministry of Education during the critical period 1981-1983.

The paper is completed with an outline of P. and R.S. Education and Research, in Yugoslavia^{Cyprus} and Albania, based on responses of relevant questionnaires and other information from official sources.

1. IDEOLOGICAL ASPECTS AND THEORETICAL FRAMEWORK OF THE CHANGE IN GREEK UNIVERSITIES.

The basic axis of the new educational policy followed by the Government of Change, which was elected in October 1981, is that Education is a social benefit and a right of every citizen and it is the duty of the State to provide it to all citizens.

The predominant choice in the new policy is that Democratic Education should develop both human and natural resources in a nationally independent process aiming at an integrated economical, social, technological and cultural development. This should be done through democratic planning, people's participation, de-centralization, socialization and autogestion.

It is evident that education is the basis of social change. Therefore, our interest has been focused on the young generation and the workers, who are the protagonists in social evolution. We aim at providing them equal opportunities in education through open, objective and meritocratic processes, everywhere in the country, whenever they decide to have extra or more specialized education or practical training according to their interests, talents and special needs.

It is the first time that on both legislative and practical level the social role of work and the equalization of manual and intellectual work are recognised. In this way we hope to put an end to the pursuit of "academic studies "by young people, which was in fact the only way they had to take as a means of social recognition no matter what their desire and/or talent was.

In this context we developed Professional and Vocational orientation courses, in three classes of secondary schools, while at the same time we are planning and realizing special vocational training radio/TV programmes. These programmes will give the parents and students reliable information not only on the vocations, and professions and the required skills respectively, but also on the real needs of production according to the Democratic Planning, the five-year development plan and the real economic situation (wages, unemployment rate etc).

Moreover we abolished the examinations that were required to enter Lyceum (upper secondary school), we gave new content in the technical and Vocational Education through new legislation, the first stage of which was completed in 1983, we recognized the equal role of academic and vocational education, creating, in this way, the background for a different orientation of young people, a large number of whom being unable to find a vacant seat in any University faculty in Greece, used to immigrate in order to study abroad, and to come back to the country to join the "army" of unemployed graduates. (In 1981 there were 45,000 Greek students abroad and the exchange money spent mounted US\$ 140.000.000).

In the last two years we took the following measures, which build up an integrated policy aiming at a structural social change:

1. Measures for the democratization and decentralization of Civil Administration, realized by the Ministry to the Prime Minister (among them is the law referring to the way of employing the civil servants e.t.c.).

2. Measures for the development of local self-government and people's participation, realized by the ministry of the Interior.
3. Measures for revitalizing the Economy, increasing production and productivity, creating new conditions for economic development and new relations in production, which will support people's participation, socialization, autogestion and co-operative activities (co-operative, municipal or mixed enterprises).

As far as education is concerned, one of the basic measures was the passing of the Law 1268/82 : "For the Structure and Function of Higher Education ".

This law:

- abolishes the professor's "chair" and establishes the University "Departments" on which the self-administration of Universities and active students' participation is based,
- secures the necessary academic and social control,
- secures the necessary academic and social control of Universities through the National Academy of Letters and Science and the National Council of Higher Education,
- creates the presuppositions for revitalizing of Universities so that teachers and students make productive work on subjects associated with the needs of the community,
- establishes, for the first time in Greek Universities in a systematic way Research and post-graduate studies.

Since July 1982-when this law passed- teachers and students enjoy a new quality of work and cooperation despite the difficulties rooted in the conflicts that had dominated Higher Education for fifty years .

So far, despite these difficulties of adjustment and the strong negative reaction of the academic and social Establishment, which

had cut off the universities from their social context, all the new institutions have been legislated ^{and} new curricula have been applied in all faculties and departments. All universities - both the old ones and the new ones which have been founded - are now connected with the local needs towards an independent de-centralized regional development.

Moreover a new university, the Attica University is planned to be established in 1984, the aim of which is intended to be the promotion of the interdisciplinary approach in the scientific analysis of social problems associated with technology and economic development.

2. THE NATIONAL COUNCIL OF HIGHER EDUCATION (E.S.A.P.)

The establishing of the National Council of Higher Education (E.S.A.P.) is a crucial step towards the materialization of people's participation and Democratic Planning in Higher Education.

This institution of social control, had been a permanent goal of the progressive social movements inside or outside the universities for more than twenty years.

In E.S.A.P. there is a representation of, government, political parties, municipalities, social organizations, all the deans of universities, students and workers' unions. This representation secures the reliable objective and integrated analysis of university problems.

The good function of the ESAP, however, depends on the degree of social responsibility of the above representative members, who should analyze the problems systematically and utilize their scientific and social experience.

Generally speaking the ESAP is an institution where people's participation is being practically tested. The members are to play a very important role in planning and organising the function

of universities in relation to the needs of production and under the fundamental policy of creating a democratic university, which will serve people's needs and will lead to an independent development of the country.

The function of the ESAP is based on the free exchange of ideas, the scientific analysis of proposals and the de-centralization of its activities.

It is remarkable that, so far, in the first three conventions of ESAP the decisions were of common approval, which proves the willingness of its members to fulfil their mission.

The equally honoured participation of all members, helps in facing the problems in a scientifically and socially acceptable way. The creative contribution of each participant is necessary in making the right decisions.

At the same time, the ESAP functions in a de-centralized way, which secures its effectiveness. Local universities, members of the ESAP, are the nuclei of creative work on a local level with the participation of other local representatives.

In this way the government of change has relied to a large extent, on the academic community and social organizations in its effort to associate Higher Education with production and development. The success of the ESAP is based not only on the responsibility and contribution of each member but also on the collective willingness to propose solutions to the government that will be socially accepted.

3. THE CONTRIBUTION OF THE DEPARTMENT OF CADASTRE, PHOTOGRAMMETRY AND CARTOGRAPHY OF THE UNIVERSITY OF THESSALONIKI TO DEVELOPMENT.

In accordance with the Act 1268/82 : "For the Structure and Function of Higher Education", all universities, through self-administration procedures, have been re-structured into faculties

and departments.

At the university of Thessaloniki, the department of Cadastre, Photogrammetry and Cartography according to Act 1268/82, is the educational-research unit of the Faculty of Rural and Surveying Engineering of the Polytechnic School which deals with:

- Cadastre
- Land Policy
- Geography
- Regional Development
- Land Use and Land Values
- Monitoring of the Environment
- Integrated Surveys
- Photogrammetry
- Photointerpretation and Remote Sensing
- Cartography

The Department of Cadastre, Photogrammetry and Cartography covers education and research on the basic principles, methods and techniques of the related subjects.

- . assigns students personal or group research projects with the help and instructions of their teachers.
- . carries out research on specific applied subjects related to the local natural and socio-economic needs.

Therefore, the Department of Cadastre, Photogrammetry and Cartography with the co-operation of teachers and students, contributes decisively to the shaping of the theory and practice on which Democratic planning and development of human and natural resources are based.

The research work consists of:

- A. Developing the methodology for:
 - a) planning the best possible Cadastral Land Information System for Greek natural and socioeconomic conditions making use of photogrammetry and Remote Sensing methods and techniques.

- b) planning the best possible function of the above system on regional or municipal level.
- c) the experimental carrying out of the National Cadastre for a specific area of Greece and the critical analysis of the contribution of Photogrammetry and Remote Sensing techniques.
- d) the contribution of the National Cadastre, Mapping and Natural Resources Inventories in regional development.
- e) planning of an integrated land consolidation model as a tool for regional development.
- f) working out remote sensing imagery for land use studies.

(The above subjects are also dissertation projects carried out by scientific collaborators of the Department of Cadastre, Photogrammetry and Cartography).

B. The analysis of land Policy and Cadastre problems in Greece like:

- a) Land purchase by foreigners.
- b) Land registration and evaluation of large estates owned by the Church, monastries, the State, municipalities and individuals.
- c) Technical specifications for the National Cadastre and Mapping of Greece.
- d) Proposals for land use policy aiming at facing problems related to the present land structures (exploitations with many, very small and dispersed land parcels, illegal land use changes e.t.c.)
- e) Formulation of objectives and measures for the protection and administration of coasts.
- f) Shaping the framework for establishing a Cadastral Land Information System for the protection and administration of coasts.
- g) Utilization of the possibilities of Photogrammetry and Remote Sensing for the preparation of the necessary metrical and qualitative information infrastructure for

development program.

By working out research and other students' works in the Department of Cadastre, Photogrammetry and Cartography, many projects related to regional development have been completed:

- a) They all cover research on land property/use/exploitation units, which helps proprietors/users or the State to make decisions related to production, building, changes of land use, land exploitation, town planning, land policy e.t.c.
- b) They cover problems existing in the places of birth or future employment of students, which makes them familiar with the specific natural and socio-economic conditions of a specific region and facilitates their future scientific and professional career.
- c) They connect the present situation of land property/use/exploitation units, with future plans which will be based on their scientifically worked out proposals for collective land exploitation, for productive land use changes, for democratic town planning, socialization of the exploitation of natural resources, integrated land consolidation e.t.c., on a regional level.
- d) They all demand collective work and continuing co-operation with municipalities and other regional authorities, which contributes to the students' reliable and systematic approach of problems, in the areas where they will function as citizens and scientists and will have the necessary feed-back information which should be evaluated in the process of their research work.
- e) They connect theory with practice towards a decentralized regional development through the study of a decentralized National Cadastral Information System and the study of:
 - 1) Land Structure at Apollonia, Thessaloniki, the regions of Preveza and Karthitsa and the village Ormenio in the region of Evros.
 - 2) The change in land use/value in the town and region of Thessaloniki, Athens and elsewhere through expropriation data.

- 3) The natural resources of the regions of Imathia and Serrae.
- 4) Subjects related to development, land policy and environment protection.

In the third part of this project we have tried to show how the theory of the Law 1268/82 has been materialized in the field of research in the Department of Cadastre, Photogrammetry and Cartography of the Faculty of Rural and Surveying Engineering at the University of Thessaloniki.

In the new context the development of education and research in the fields of Photogrammetry and Remote Sensing is dialectically associated with the need for their best possible utilization in the establishing and function of the National Cadastre, which is the essential infrastructure for development but unfortunately has not been materialized yet in our country.

4. EDUCATION AND RESEARCH IN PHOTOGRAMMETRY AND REMOTE SENSING IN ALBANIA, YUGOSLAVIA AND CYPRUS.

Despite the continual attempts until March 6, 1984 it was not possible for us to acquire reliable information referring to the education and research on Photogrammetry and Remote Sensing in Albania.

With the help of Professor Dr. Ing. Franjo Braum of "Geodetski Fakultet Sveučilišta u Zagreb, Zavod za Fotogrametrijo", we managed to collect the following information about the institute of Photogrammetry of Zagreb University.

- Name and Address of Institution : Geodetski Fakultet
Sveučilišta U Zagreb.
- Name of Photogrammetry and/or
Remote Sensing Unit : Zavod za Fotogrametrijo.
- Level : University
- Duration of Study Program (years): 4,5
- Name of Courses and Laboratories and
total number of hours per course and per Laboratory:

Photography	2 + 1
Photogrammetry I	4 + 4
Photogrammetry II	4 + 4
Rural	
Photogrammetry	3 + 1

- Types of Diplomas :Dipl. Eng.
- Average number of graduates per year (last 5 years) :48
- Instruments of Photogrammetry:

Autograph A5 Wild
 Autograph A6 Wild
 Autograph A7 Wild
 Autograph A8 Wild
 Autograph B8 Wild
 Rectifier
 Stereocomparator Zeiss
 Aeropojektor Multiplex e.t.c.
 Phototheodolite Photheo 19/1319 Jena
 Model Coordinates Recorder EK22 Wild
 Hewllett Packard 9845 Computer
 Card Punch IBM 29 e.t.c.

- Teachers :Prof. Dr. Ing. Franjo Braum
 Prof. Dr. Ing. Viekoslav Donassy
 Dipl. Ing. Krunoslav Smit
- Number of teaching assistants :1
- Number of Professional Researchers :3
- Number of Research assistants and Auxiliary research personnel:1
- Number of technical personnel : 5
- Specialization : Photogrammetry, Orientation,Restitution,
 Terrestrial and Architectural Photo-
 grammetry.
- Total number of R+D employees of the Geodetski Fakultet
 Sveucilista u Zagreb : 103
- Total annual budget : 26.800.000 new dinars+ 42.000.000 new
 dinars.
- R+D personnel with University Degrees (number) : 7
- R+D Technicians (number) : 5

- Our colleagues of the Department of Lands and Surveys in Cyprus contributed to our Subworking Group the following information:
- Instrument of Photogrammetry of the Dept of Land and Surveys;
 - 2 stereometrographs Carl Zeiss Jena
 - 2 Mirror stereoscopes
 - 1 Contact Printer
 - 1 Contact Frame
 - 1 Cartographic Camera
- Total number of employees : 9
- R+D personnel with University degrees : 3
- Techniciens : 6

5. Acknowledgments:

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