

No. 3

**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)**

**ROMANIA**

**MINISTRY OF AGRICULTURE AND FOOD**

**THE FEASIBILITY STUDY  
ON  
THE IRRIGATION PROJECT  
IN  
RUGINESTI-PUFESTI-PANCIU  
DISTRICT VRANCEA**

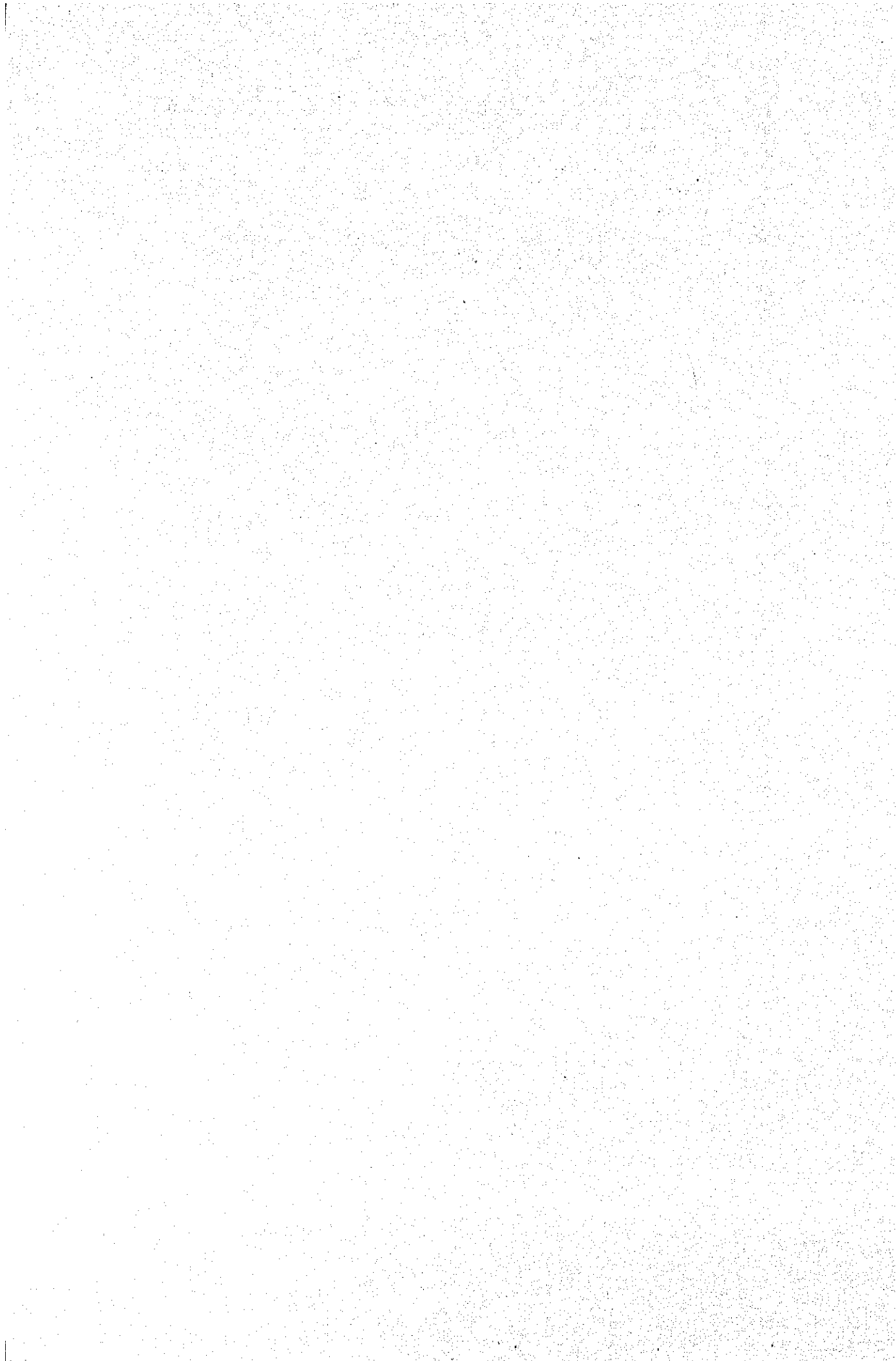
**FINAL REPORT**

**VOLUME I: MAIN REPORT**

**JUNE 1995**

**PACIFIC CONSULTANTS INTERNATIONAL  
SANYU CONSULTANTS INC.**

<b>AFA</b>
<b>JR</b>
<b>95-49</b>



**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)**

**ROMANIA**

**MINISTRY OF AGRICULTURE AND FOOD**

**THE FEASIBILITY STUDY  
ON  
THE IRRIGATION PROJECT  
IN  
RUGINESTI-PUFESTI-PANCIU  
DISTRICT VRANCEA**

**FINAL REPORT**

**VOLUME I: MAIN REPORT**

**JUNE 1995**

**JICA LIBRARY**



**1122880 (6)**

28589

**PACIFIC CONSULTANTS INTERNATIONAL  
SANYU CONSULTANTS INC.**



The following foreign exchange rate is applied in the study:  
US\$1.00=1,753 Lei (as of October 1994)

## PREFACE

In response to a request from the Government of Romania, the Government of Japan decided to conduct a feasibility study on the Irrigation Project in Ruginesti-Pufesti-Panciu, District Vrancea and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to Romania a study team headed by Mr. Masahito Yamanaka, Pacific Consultants International, three times from June 1994 to March 1995.

The team held discussions with the officials concerned of the Government of Romania, and conducted the field survey at the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Romania for their close cooperation extended to the team.

June, 1995



Kimio Fujita

President

Japan International Cooperation Agency

June, 1995

Mr. Mikio Fujita  
President,  
Japan International Cooperation Agency,  
Tokyo, Japan

Dear Mr. Fujita,

**Letter of Transmittal**

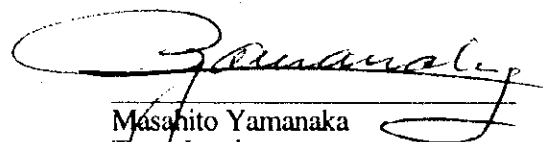
We are pleased to submit you the final report of the Feasibility Study on the Irrigation Project in Ruginesti-Pufesti-Panciu, District Vrancea of Romania. The report contains the advice and suggestions of the authorities concerned of the Government of Japan and your Agency as well as the formulation of the above mentioned project. The comments made by the officials concerned of the Government of Romania during discussions on the draft report which were held in Bucharest City and Tokyo are also included in this report.

The Project is feasible judging from both economic and financial view points, and the implementation of the Project will contribute very much to the improvement of living standards of the farmers in the area and also to the development of the area. Furthermore, the Project is very important as the model agricultural development project for the improvement of agriculture not only of the District but also in Romania in cope with the progressing free economic system, even though the initial investment cost is more expensive than those of the rehabilitation works of the existing irrigation schemes mostly located along the Danube River.

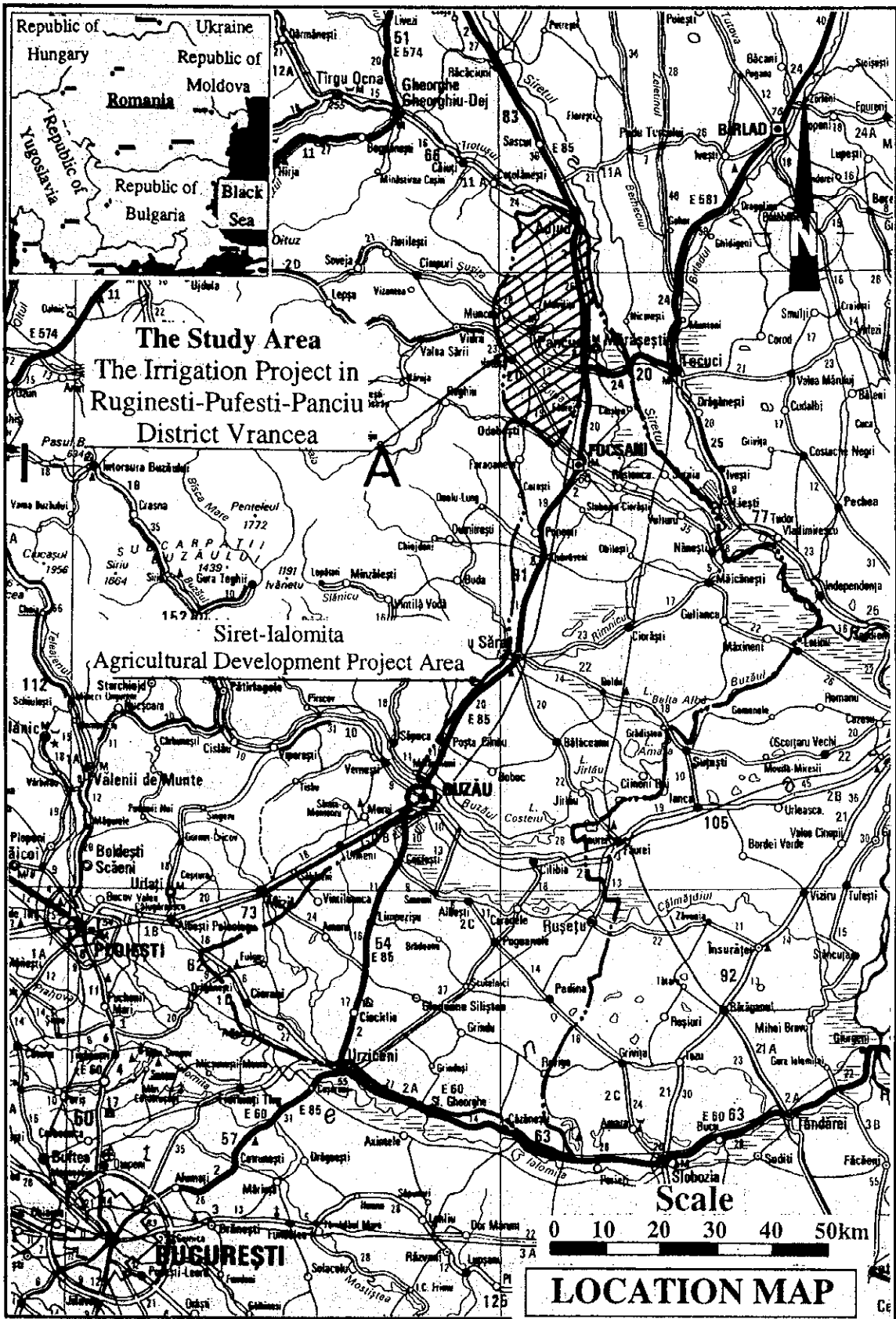
In view of the urgency of irrigation development in the area and of the need for socio-economic development of Romania as a whole, we recommend that the Government of Romania implements this Project as a top priority.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs, the Ministry of Agriculture, Forestry and Fisheries and the Embassy of Japan in Romania. We also wish to express our deep gratitude to the officials concerned of the Government of Romania for the close cooperation and assistance extended to us during our field study.

Very truly yours,

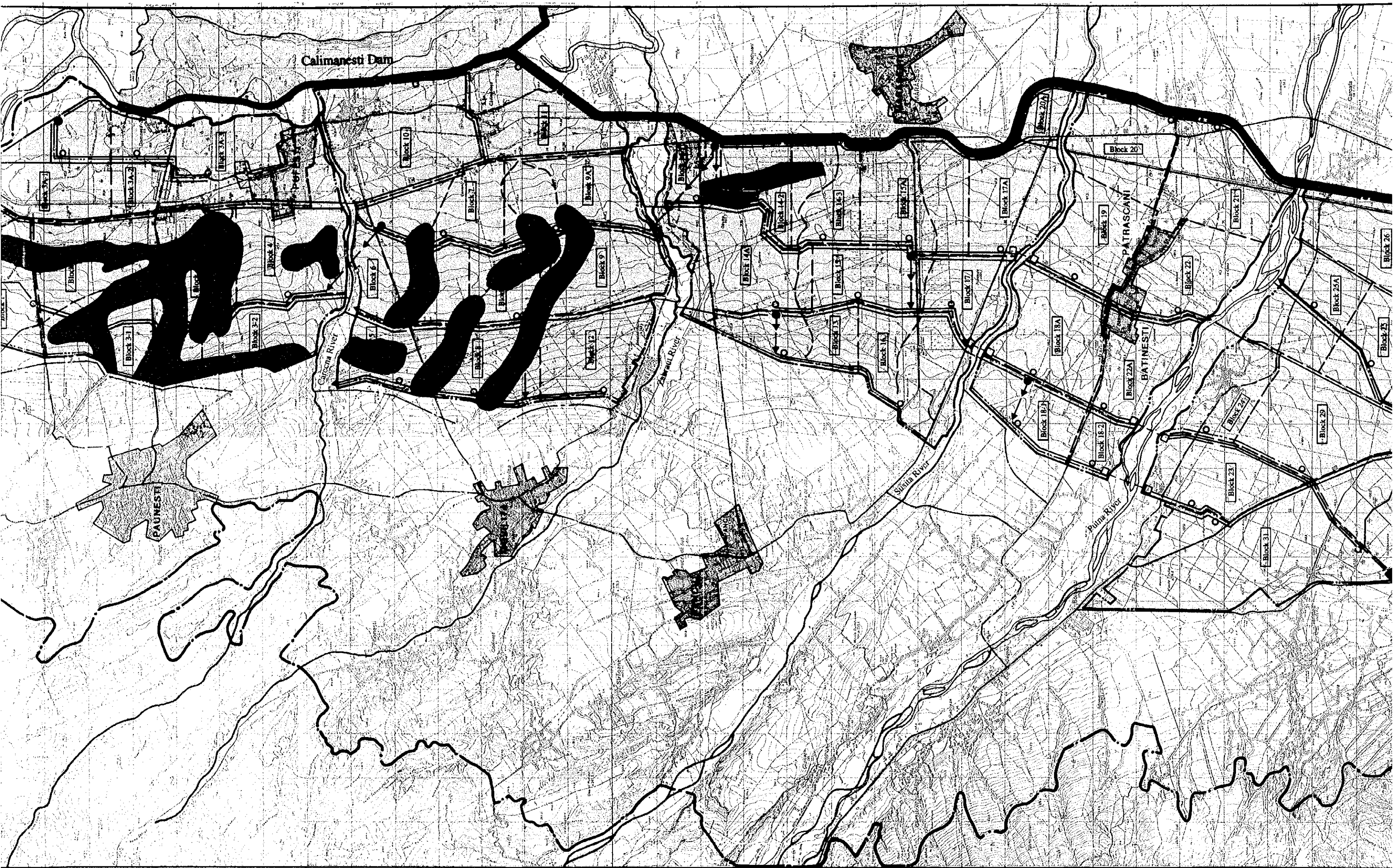


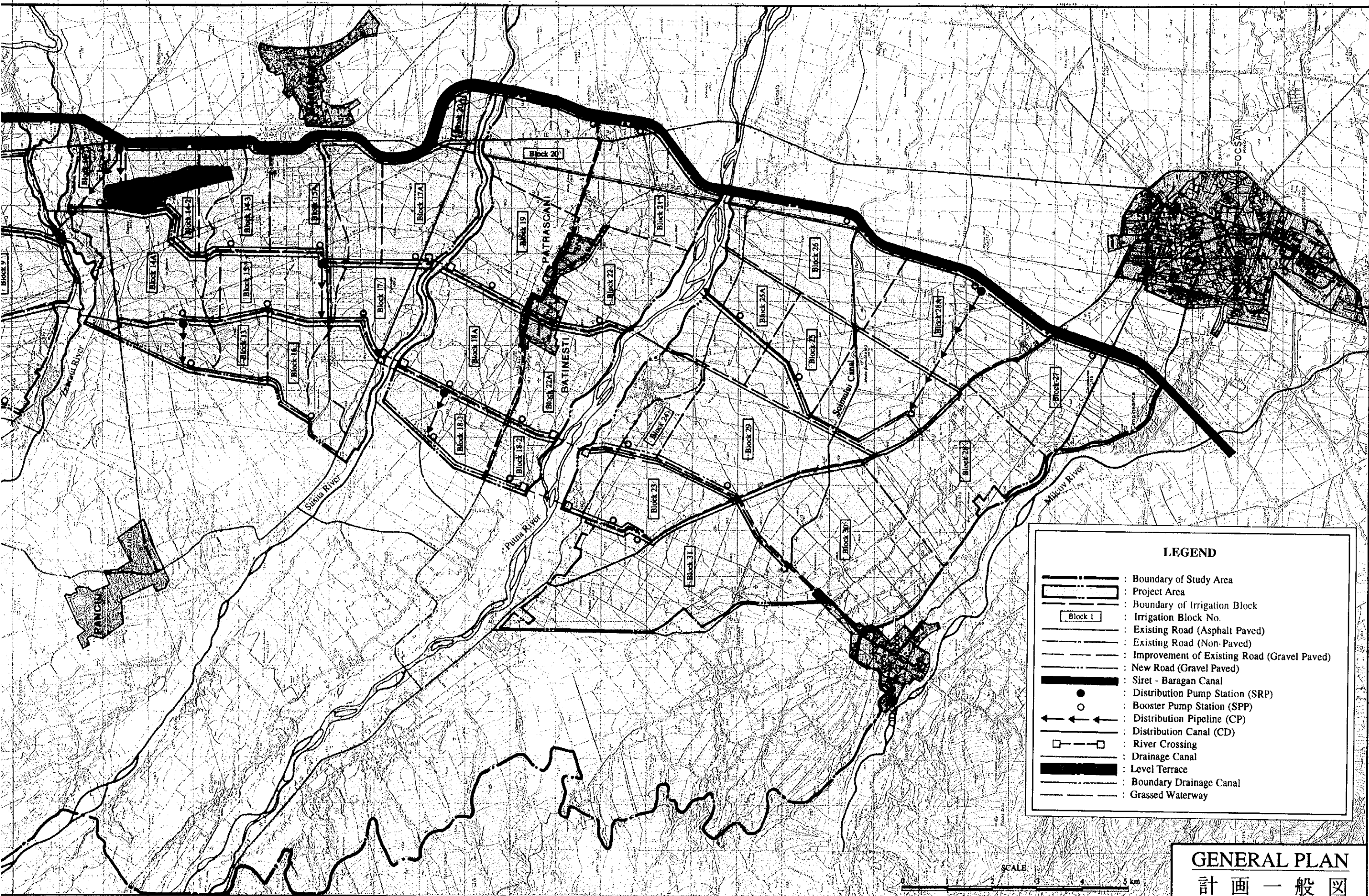
Masahito Yamanaka  
Team Leader  
Feasibility Study Team on the  
Irrigation Project in Ruginesti-  
Pufesti-Panciu, District Vrancea  
Pacific Consultants International/  
Sanyu Consultants Inc.











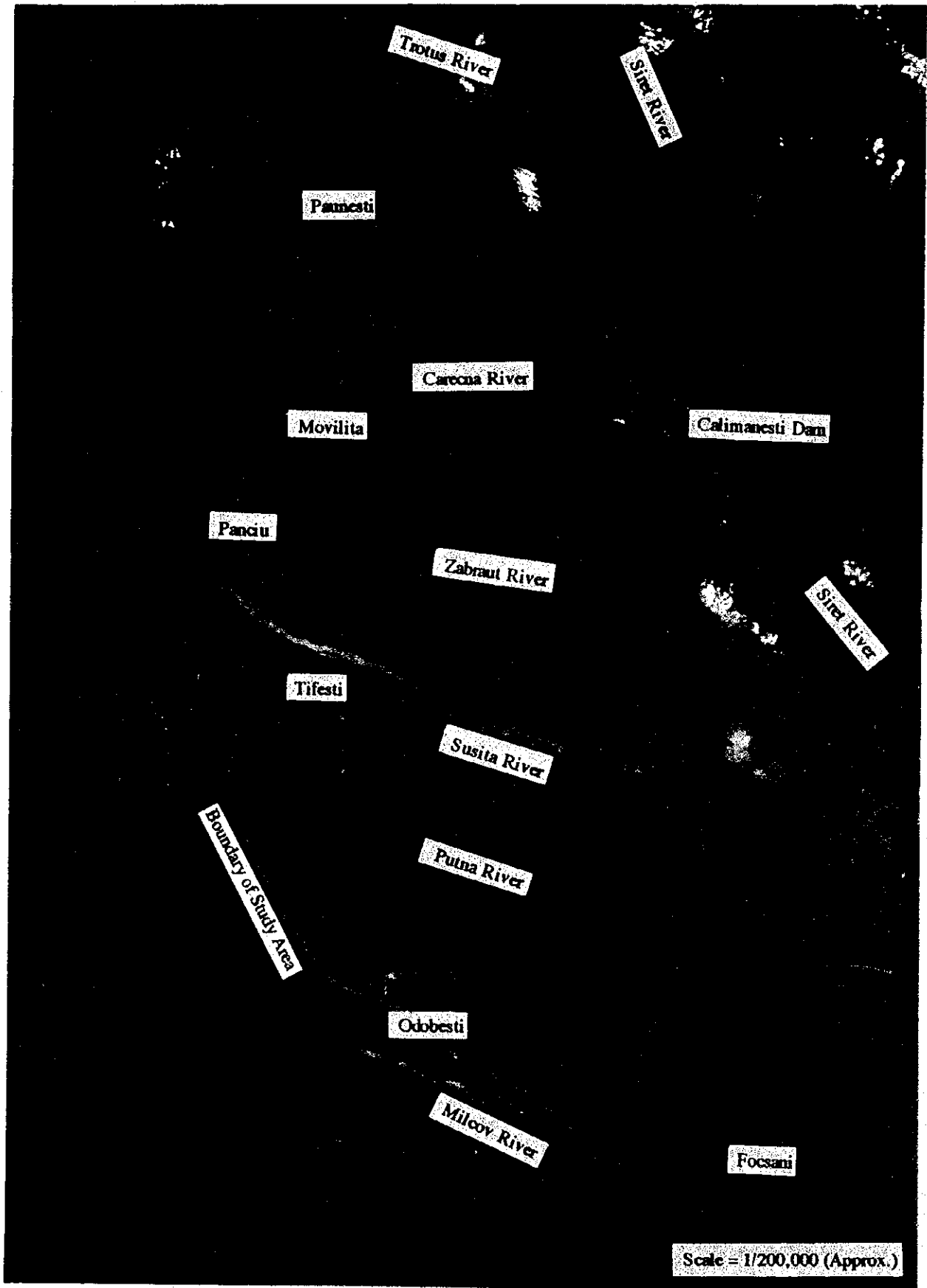
**LEGEND**

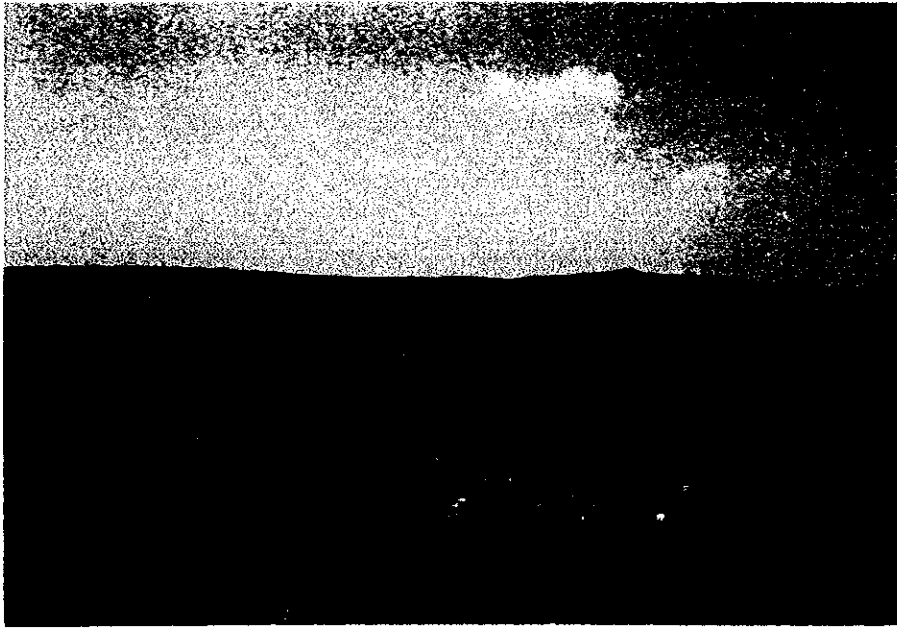
- : Boundary of Study Area
- : Project Area
- : Boundary of Irrigation Block
- : Irrigation Block No.
- : Existing Road (Asphalt Paved)
- : Existing Road (Non-Paved)
- : Improvement of Existing Road (Gravel Paved)
- : New Road (Gravel Paved)
- : Siret - Baragan Canal
- : Distribution Pump Station (SRP)
- : Booster Pump Station (SPP)
- : Distribution Pipeline (CP)
- : Distribution Canal (CD)
- : River Crossing
- : Drainage Canal
- : Level Terrace
- : Boundary Drainage Canal
- : Grassed Waterway

**GENERAL PLAN**  
計 画 一 般 図

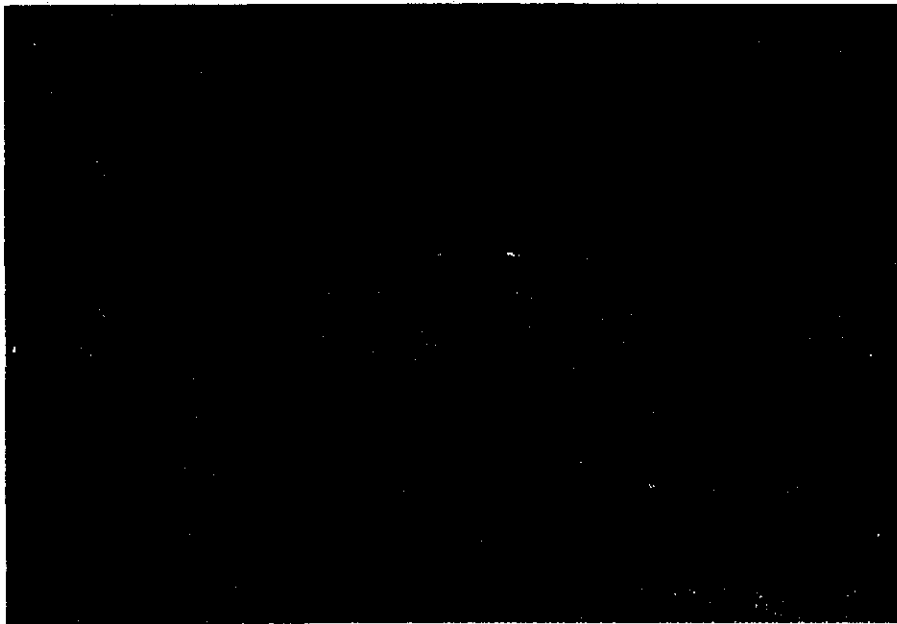
**1. The Study Area by Satellite Image Photos on April 5, 1990**

The Calimanesti dam had not been completed by that time. Red color shows forest and densely vegetated arable land, black color is water surface and blue color is underflow river.





**2. Irrigation Study  
Area (Maize Field)**



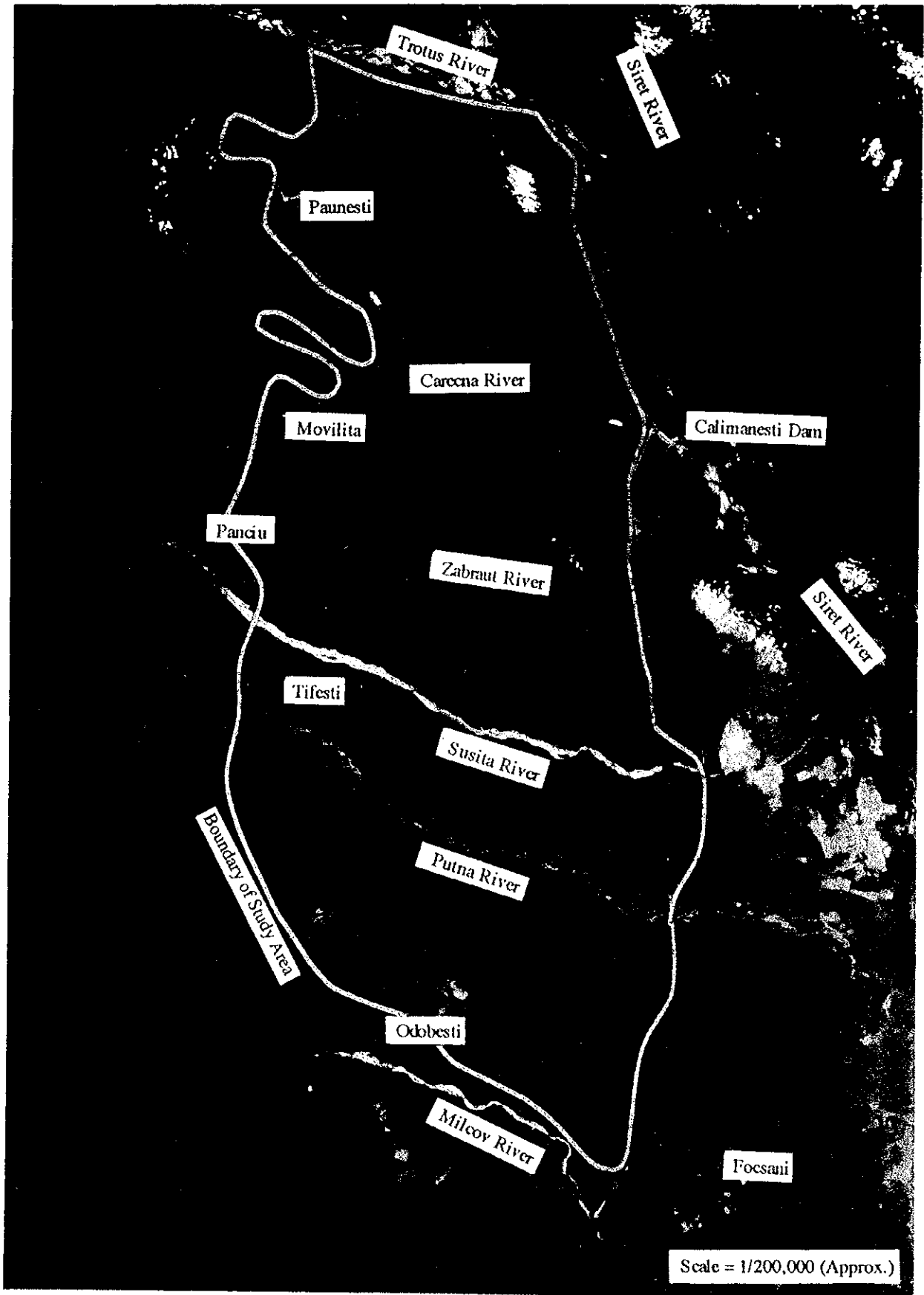
**3. Irrigation Study  
Area (Wheat Field  
under Harvesting)**



**4. Irrigation Study  
Area (Vineyard)**

1. The Study Area by Satellite Image Photos on April 5, 1990

The Calimanesti dam had not been completed by that time. Red color shows forest and densely vegetated arable land, black color is water surface and blue color is underflow river.

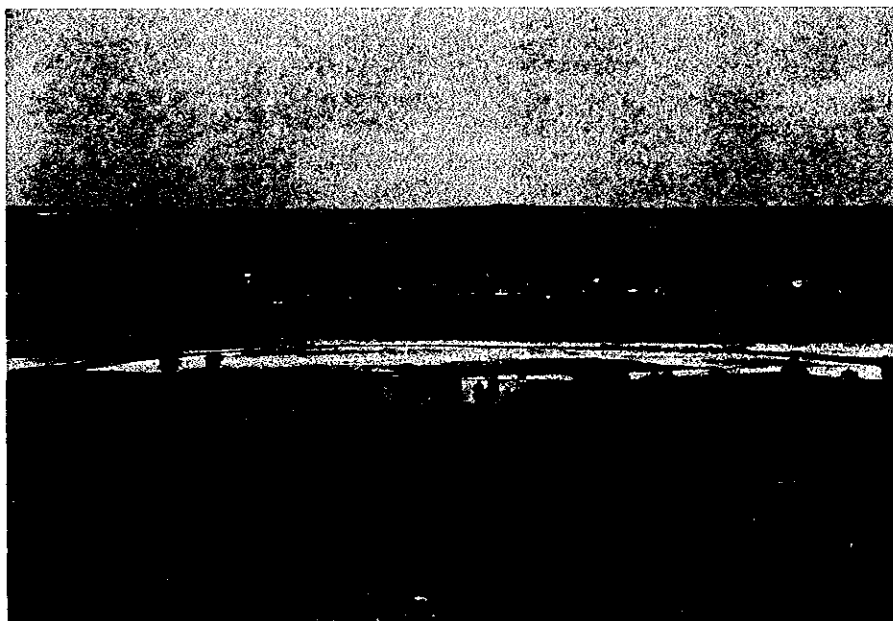




2. Irrigation Study  
Area (Maize Field)



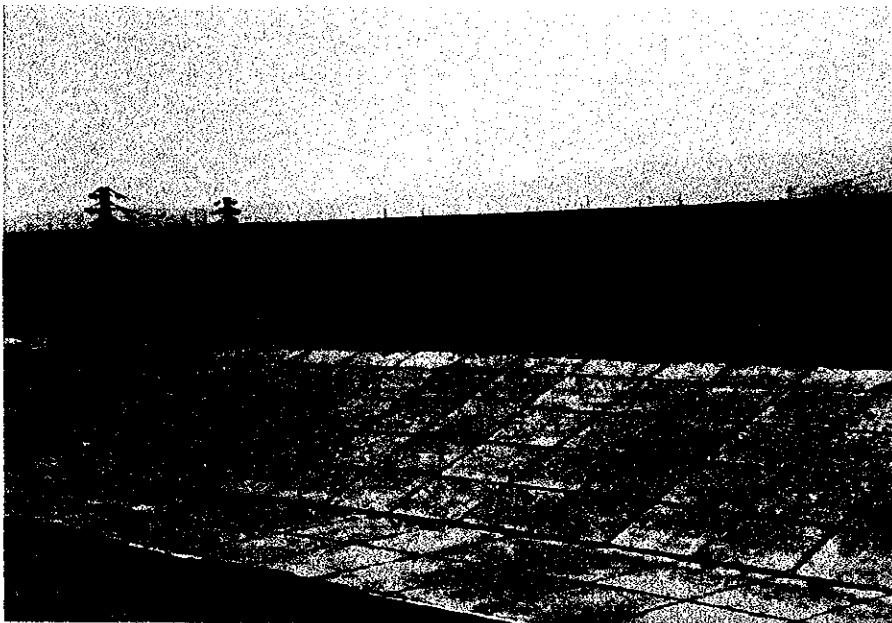
3. Irrigation Study  
Area (Wheat Field  
under Harvesting)



4. Irrigation Study  
Area (Vineyard)



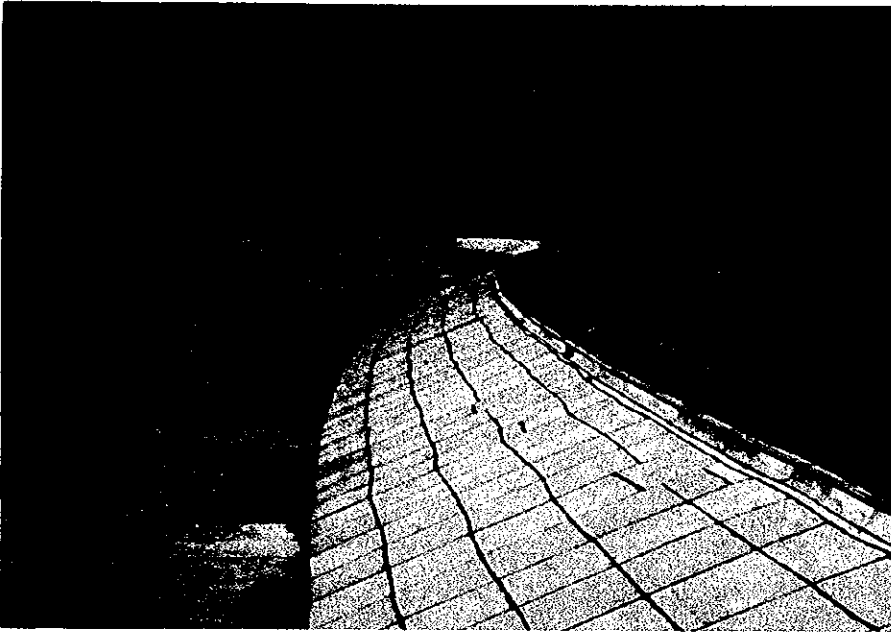
**5. Calimanesti Dam  
and Power Station**



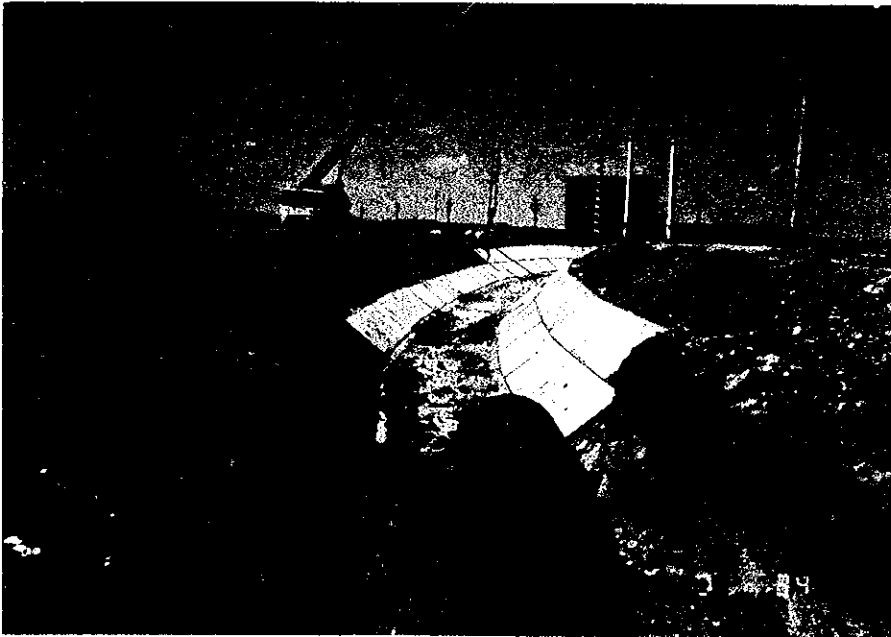
**6. Overview of SRP-V  
Distribution  
Pump Station**

**7. Inside of SRP-V  
Distribution  
Pump Station**





8. Completed Section  
of Siret-Baragan  
Canal



9. Under-construction  
Section of  
Distribution Canal  
Pre-cast concrete panel  
is used for lining.



10. Completed Section  
of  
Distribution Canal  
Damages and sliding  
of panel and soil-inflow  
through the joints are  
seen in many sites.





**11. Putna Irrigation Canal**  
Sole existing irrigation system in the Study Area.



**12. Ravine in the Study Area**  
A lot of eroded soil flow into the rivers in the Study Area.



**13. Gully Erosion**  
Gully erosion is developed in many sloped areas in the Study Area.