MOROCCO

WINTER SNOWPACK AUGMENTATION PROJECT

(608-0190)

BUREAU FOR NEAR EAST

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

FEBRUARY 1984

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A = Add, C = Change, D = Delete — [A] — Amendment Number: _____ — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Morocco

3. PROJECT NUMBER: 608-0190

4. BUREAU/OFFICE: NE/PD [03]

5. PROJECT TITLE (maximum 40 characters): Winter Snowpack Augmentation

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM DD YY: 03 31 90

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY 84 — B. Quarter 2 — C. Final FY 85

8. COSTS ($000 OR EQUIVALENT $1 = 8.0dh)

A. FUNDING SOURCE	FIRST FY 85			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	2980	20	3000	5800	200	6000
(Grant)	(2980)	(20)	(3000)	(5800)	(200)	(6000
(Loan)	( )	( )	( )	( )	( )	(
Other U.S. 1. NOAA	114		114	114		114
Other U.S. 2. Peace Corps				68		68
Host Country		2632	2632		6410	6410
Other Donor(s)						
TOTALS				5982	6610	12592

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	C. PRIMARY TECH. CODE 2. Loan	D. OBLIGATIONS TO DATE 1. Grant	D. OBLIGATIONS TO DATE 2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	E. AMOUNT APPROVED THIS ACTION 2. Loan	F. LIFE OF PROJECT 1. Grant	F. LIFE OF PROJECT 2. Loan
(1) ES	752	091		0	0	3000	0	6000	0
(2)									
(3)									
(4)									
TOTALS				0	0	3000	0	6000	0

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 876 | 874 | 873 — 11. SECONDARY PURPOSE CO: 701

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	ENV	TNG					
B. Amount	3600	1200					

13. PROJECT PURPOSE (maximum 480 characters)

To assist in the development within the Moroccan Government of the ability to design, plan, implement, monitor, and evaluate scientifically based winter snowpack augmentation programs.

14. SCHEDULED EVALUATIONS: Interim MM YY: 09 85 — MM YY: 03 87 — Final MM YY: 03 90

15. SOURCE/ORIGIN OF GOODS AND SERVICES: ☐ 000 ☒ 941 ☐ Local ☐ Other (Specify): _____

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)

17. APPROVED BY — Signature: [signature] — Title: Assistant Administrator, Bureau for Near East — Date Signed MM DD YY: 01 04 84

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY: 01 20 84

SUMMARY AND RECOMMENDATIONS

A. Project Title : MOROCCO - Winter Snowpack Augmentation Project

B. Project Number : 608-0190

C. Source of Funds : Morocco Mission Economic Support Fund

Total Project Amount : The Total Project Cost is estimated at $12.59 Million with an AID contribution of $6.0 Million or 47.9%. These costs broken out by source and percent of contribution are estimated below:

Estimated Life of Project Budget (in 1000's of U.S. Dollars)*

Source		Total
A. Government of United States		
1. AID	(47.9%)	$6000.0
2. NOAA**	(0.9%)	114.0
3. Peace Corps	(0.5%)	68.0
Subtotal	(49.3%)	$6182.0
B. Government of Morocco		
1. National Meteorological Organization	(18.9%)	$2370.0
2. Royal Moroccan Air Force	(31.5%)	4000.0
3. Royal Air Maroc	(0.3%)	40.0
Subtotal	(50.7%)	$6410.0
C. Total Project Cost		$12592.0

* All costs in Moroccan Dirhams have been converted at a rate of 8.0 dh to $1.00 U.S.

** NOAA: National Oceanographic and Atmospheric Administration, Department of Commerce.

E. Terms : Grant

F. Grantee : Funds will be made available to the National Meteorological Organziation, Ministry of Transportation, Government of Morocco. Use of AID funds will be restricted to support of civilian organizations in compliance with the provisions of the Foreign Assistance Act of 1961, as amended, Section 531 (c). In addition, no United States Government funds will be used for direct financing of cloud seeding equipment, materials or operation costs in compliance with current policy.

G. Coordinating Entities : USAID/Morocco and AID/W - NE/PD/ENV

H. Implementing Entities :

1. U.S. Government
   a. USAID/Morocco and AID/W - NE/PD/ENV (Project Design and Management);
   b. Bureau of Reclamation, U.S. Department of the Interior (Under a Participating Agency Service Agreement (PASA) provides scientific management and serves as a procurement agent for AID);
   c. National Oceanographic and Atmospheric Administration; Department of Commerce (Provides Scientific Equipment);
   d. Peace Corps (Provides a Volunteer to teach English).

2. Government of Morocco
   a. National Meteorological Organization, Ministry of Transportation (Provides scientific expertise and is responsible for design, planning, implementation, monitoring and evaluation of project);
   b. Royal Moroccan Air Force (Provides operational expertise and is responsible for cloud seeding operations);
   c. Royal Air Maroc (Provides international transportation for participant trainees);
   d. Other Government Organizations (Provide data and specialized support services).

I. Life of Project : Five Years

J. Project Goal : The goal of the project is to increase manageable water resources in Morocco through the implementation of a scientifically based weather modification project on a demonstration basis. It is anticipated that the project will increase precipitation in the project area by 10 percent on an annual basis. The project will also improve the availability of water to users by allowing for additional surface water to be stored in reservoirs and through increased groundwater storage.

K. Project Purpose : The purpose of the project is to develop within the Government of Morocco an ability to design, plan, implement, monitor and evaluate scientifically based weather modification programs. Weather modification programs will be developed as an integral part of overall management of water resources in Morocco. The project will support development of this capability through the transfer of technology, provision of technical assistance, execution of special analyses, provision of scientific equipment and training.

L. Environmental Soundness of Project : The project as designed is environmentally sound and is in compliance with the requirements of 22 CFR 216,"AID Environmental Procedures". The project design places emphasis on the development and implementation of suspension criteria which will serve as a mitigation measure to avoid potential

risks associated with flooding, creation of hail, etc. It is not anticipated that the project cause decreases in precipitation either within Morocco or in adjoining countries. The use of silver iodide (AgI) as a seeding agent will not result in negative environmental impacts. In addition, the project design requires the Environmental Coordinator, Bureau for Near East, AID/W to conduct an annual field monitoring visit of two weeks duration to assure environmental soundness during project implementation.

M. Special Policy Considerations : The project has been reviewed by AID, the Department of State, the White House Office of Science and Technology Policy and the National Security Council and has been granted a policy waiver from the National Security Council as required under the provisions of the United States Government and AID policy on "Weather Modification as Technical Assistance" (AIDTO CIRC 495, August 19, 1975).

N. Recommendation : USAID/Morocco recommends authorization of a grant in the amount of $6.0 million. This grant will be used to fund the U.S. dollar costs of scientific management services, administrative support, technical assistance, special analyses, scientific equipment and training.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 84 to FY 88
Total U.S. Funding: $6 million
Date Prepared: 1/20/84

oject Title & Number Morocco - Winter Snowpack Augmentation (608-0190)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
ogram or Sector Goal: The broader jective to which this project ntributes: Improve the reliability of water users through the development greater stored surface and ound water, and better water sources management.	Measures of Goal Achievement: Increased availability of water, both ground and surface, in the target area for use in irrigation, industry, hydropower generation, and households.	Scientific evaluations which use a target-history and target-control for an evaluation baseline to statistically demonstrate an increase in available water over natural conditions.	Assumptions for achieving goal targets: An adequate number of seedable clouds will be available. Seeding operations can be carried out properly by newly trained personnel.
oject Purpose: develop within the Government of rocco an improved capability to an, design, implement, monitor aluate a scientifically based d cost effective weather dification program in the context overall water resources nagement.	Conditions that will indicate purpose has been achieved: End of Project Status: Functioning weather modification program at the National Meteorological Organization with both operational and evaluation/monitoring capabilities.	. scientific and economic evaluations to be conducted under project . Project evaluations . Annual scientific monitoring reports . Project monitoring	Assumptions for achieving purpose: National Meteorological Organization is receptive to technical assistance in weather modification. Continued priority is given by Government of Morocco to supporting the project.
tputs: Project Planning and Management Center. Operations Control Center Aircraft Home Base Aircraft Operations Base High Altitude Weather System Training	Magnitude of Outputs: 1. Established at Casablanca and staffed with Director, Asst. Director, and 3 meteorologists. 2. Established at Beni Mallal and staffed with Director, Asst. Director, 2 controllers, 3 radar operators, 2 forecasters, 2 radiosonde teams, and 1 electronics technician. 3. Established and staffed with coordinator, 2 aircraft teams, maintenance support team, and logistical support teams. 4. Established and staffed by Director, Asst. Director, 2 controllers, 5 ground control staff, and ground support crew. 5. Established and staffed by 3 meteorologists (part-time). 6. To be specified in annual project implementation plans.	. Scientific and economic evaluations. . Project evaluations . Annual scientific monitoring	Assumptions for achieving outputs: Moroccan personnel will be made available to project. Moroccan equipment (including aircraft) will be made available to project.
puts: Technical Assistance (a) long-term (b) short-term Scientific Equipment and related Expendable Supplies Training	Implementation Target (Type and Quantity) 1. (a) Resident Scientific Advisor for five years. (b) Short-term TA to be specified in annual project implementation plan. 2. High altitude weather station, radar and tracking, radiosonde. 3. To be specified in annual	. Annual Project Implementation Plans . Monthly Project Reports . Quarterly Project Reviews . Annual Scientific Monitoring Reports . Findings of three external evaluations . Controller Records	Assumptions for providing inputs: AID inputs will be available in a timely and flexible fashion.

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