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MULTI-PURPOSE TREE SPECIES FOR NEPAL

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MAY 1, 1986

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CONGRESS' OBJECTIVES FOR THE NEPAL REFORESTATION PROJECT

- ASSIST IN NATURE CONSERVATION
- ALLEVIATE SOIL EROSION AND FUELWOOD SHORTAGE
- STIMULATE ECONOMIC DEVELOPMENT

BACKGROUND OF TRIP

THE GOVERNMENT OF NEPAL HAS INDICATED TO U.S. AID/KATHMANDU A NUMBER OF CONCERNS ABOUT THE PROJECT. TO RESOLVE THESE ISSUES AND TO ATTEMPT TO DEVELOP A MUTUALLY ACCEPTABLE APPROACH, THE GOVERNMENT OF NEPAL AGREED TO MEET WITH THE ARGONNE NATIONAL LABORATORY TEAM.

THE OBJECTIVES OF THE PROJECT TEAM TRIP TO NEPAL WERE TO:

- 1) DEVELOP A BETTER UNDERSTANDING OF THE NEEDS AND INTERESTS OF THE NEPALESE GOVERNMENT (PROBLEMS WITH THE PROJECT),
- 2) EDUCATE THE PROJECT TEAM ON WHAT TYPE OF PROJECT COULD BE SUCCESSFUL IN NEPAL GIVEN THE CURRENT SITUATION (POLITICAL, CULTURAL, ECONOMIC),
- 3) GATHER INFORMATION THAT WOULD PERMIT THE PROJECT TEAM TO DEVELOP A PROJECT THAT CAN MEET THE OBJECTIVES OF THE CONGRESSIONALLY DEFINED PROJECT; IS ACCEPTABLE TO THE NEPALESE OFFICIALS; AND IS TECHNICALLY AND CULTURALLY CREDIBLE.

THE PROJECT TEAM ENGAGED IN A NUMBER OF ACTIVITIES TO MEET THE TRIP OBJECTIVES

- MET WITH GOVERNMENT OF NEPAL OFFICIALS TO DISCUSS NEEDS AND INTERESTS AND TO ALLOW THEM TO EXPRESS THEIR CONCERNS REGARDING THE PROPOSED PROJECT.
- REVIEWED PLANNING DOCUMENTS AND IN-COUNTRY RESEARCH LITERATURE TO IDENTIFY NEPALESE PRIORITIES AND TO ASSESS RESULTS OF PAST EXPERIMENTS.
- MET WITH FORESTRY SECTOR ADMINISTRATORS AND RESEARCHERS TO ESTABLISH A PROJECT FRAMEWORK AND TO IDENTIFY RESEARCH NEEDS.
- MET WITH BRITISH, AUSTRALIAN, AND CHINESE TECHNICAL ADVISORS TO LEARN FROM THEIR PROJECTS OF RESEARCH AND TECHNOLOGY TRANSFER.
- TOOK FIELD TRIPS TO OBSERVE BIOMASS PRODUCTION AND NATURE CONSERVATION NEEDS.
 - TARAI AND INNER TARAI
 - SOLU-KHUMBU REGION
 - NURSERIES AND PLANTATIONS IN KATHMANDU VALLEY

PRIORITIES OF GOVERNMENT OF NEPAL FOR THE FORESTRY SECTOR

- NATURE CONSERVATION
- FUELWOOD PRODUCTION
- LIVESTOCK DEVELOPMENT
- COMMERCIALIZATION

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CONCERNS OF THE GOVERNMENT OF NEPAL

- POPLARS MAY ONLY BE SUITABLE FOR CERTAIN LOCATIONS.
- UTILITY OF POPLARS IS NOT WELL KNOWN TO LOCAL RESIDENTS.
 - QUALITY AS FODDER
 - QUALITY AS FIREWOOD
- MASS PLANTING OF EUCALYPTUS IN THE PAST WAS CITED AS A BAD EXPERIENCE.
- THE LARGE NUMBER OF DONOR PROJECTS HAS RESULTED IN A SHORTAGE OF SKILLED MANPOWER.

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GENERAL OBSERVATIONS BY ARGONNE TEAM ABOUT PHYSICAL CONDITIONS
AFFECTING THIS PROJECT

- ALL CLIMATIC ZONES (TEMPERATE, SUBTEMPERATE, SUBTROPICAL, TROPICAL) PRESENT IN NEPAL.
- INAPPROPRIATE LAND USE (OVERGRAZING, CULTIVATION OF STEEP SLOPES, CLEARING OF STEEP FOREST LAND).
- LACK OF FOREST REGENERATION DUE TO FREQUENT LOPING OF TREES.
- FREQUENT BURNING OF FORESTS.
- SEVERE SOIL EROSION.
- GOODS TRANSPORTED TO REMOTE AREAS BY HUMANS ONLY.

OBSERVATIONS ON REFORESTATION

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- POPLAR THOUGH NOT PREFERRED YET BY NEPALESE, CAN BE ACCEPTABLE IN SOME AREAS
- POPLAR CLONES OF VARIOUS ORIGINS HAVE BEEN TRIED AND UNFAVORABLE CHARACTERISTICS NOTED:
 - INSECT DAMAGE OBSERVED
 - POOR SITES (DROUGHTY, SLOPING, SOUTHERN ASPECT)
 - UNDESIRABLE SURFACE ROOTS (KATHMANDU VALLEY)
 - BOLE CRACKING
 - DROUGHT TOLERANT SPECIES PREFERRED
- NATIVE POPLAR *P. CILIATA*, FOUND IN HIGH HILLS AND KATHMANDU VALLEY. POPULARITY OF THIS SPECIES IN LOW RAINFALL REGIONS WAS REPORTED.
- LOCAL *FICUS* SPP. PREFERRED FOR FODDER

OBSERVATIONS ON REFORESTATION (CONT)

- NATIVE ALDER, *ALNUS NEPALENSIS*, GROWS WELL IN MOIST SOILS EVEN ON SLOPES. NO EVIDENCE OF WIDESPREAD PLANTING EFFORTS. NATURAL STANDS OBSERVED ON DRIER SOILS UP TO 8,000 FT.
- *PINUS WALLICHIANA* IS USED WIDELY IN HIGHER HILLS (UP TO 10,000 FT.)
- MAJORITY OF LOCAL RESIDENTS ASSUME AVAILABILITY OF FREE FIREWOOD FROM NEARBY FORESTS
 - THIS AFFECTS SPECIES SELECTION FOR PLANTING ON FARMS. HIGH VALUE TIMBER SPECIES PREFERRED EVEN THOUGH THEY HAVE SLOWER GROWTH.
 - POPLAR WOOD QUALITY IS CONSIDERED POOR FOR TIMBER AND FUELWOOD.
- LOCAL SPECIES *BOMBAX CIBA* IS USED FOR MATCHSTICKS. *CEIBA PENTANDRA* (KAPOK) IS BEING TESTED. USE OF POPLARS FOR MATCHSTICKS IS OF INTEREST.

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GOVERNMENT OF NEPAL FORESTRY RESEARCHER'S POSITION ON
AREAS TO GROW POPLARS

- TARAI -- PRODUCTION OF MATCH STOCK
- KATHMANDU AND POKHARA VALLEYS -- PRODUCTION OF FUEL AND TIMBER
- MID HILLS -- PRODUCTION OF FODDER

CRITERIA FOR SUCCESSFUL PROJECTS

- CONSISTENCY WITH 7TH 5-YEAR PLAN
- PROJECT SELF-SUSTAINING AFTER ANL LEAVES
- EMPLOYMENT OF AS MUCH LOCAL TALENT AS POSSIBLE

RESULTS OF NEPAL MEETINGS

- PROJECT DESIGN FRAMEWORK ESTABLISHED
- GOVERNMENT OF NEPAL WILL PREPARE PROPOSAL TO
 - IDENTIFY PRIORITY REGIONS
 - IDENTIFY END-USE CONSIDERATIONS
- STRONG SUPPORT OF U.S. AID/KATHMANDU ON PROJECT IMPLEMENTATION

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 should
 have to
 clarify

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RECOMMENDATIONS

USE THE GOOD WORKING RELATIONSHIP ESTABLISHED DURING THIS TRIP TO:

- SELECT PRIORITY REGIONS
- DETERMINE VIABLE PRODUCTION SYSTEMS
- DEVELOP PLANS FOR
 - EVALUATING SPECIES-SITE-END USE INTERACTIONS
 - REGIONAL IMPLEMENTATION