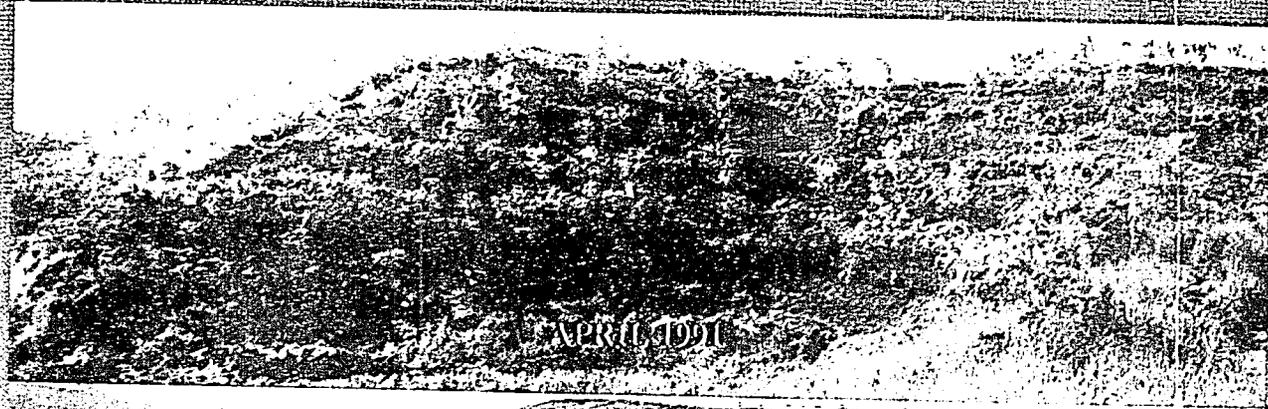


IN THE SHADOW OF MT. PINATUBO: BAMBAN REFORESTATION (1988-1991)



1/11/91
1991

IN THE SHADOW OF MT. PINATUBO: BAMBAN REFORESTRATION

(1988 - 1991)

UNDERTAKEN BY THE

FIRST PHILIPPINE HOLDINGS CORPORATION

THROUGH ITS WHOLLY-OWNED SUBSIDIARY

**TARLAC REFORESTATION
AND**

ENVIRONMENTAL ENTERPRISES, INC. (TREE)

Contracted through

**The Department of Environment
and Natural Resources (DENR)
Government of the Philippines**

Funded by

**The United States Agency
for International Development
(USAID/Philippines)**

CONTENTS

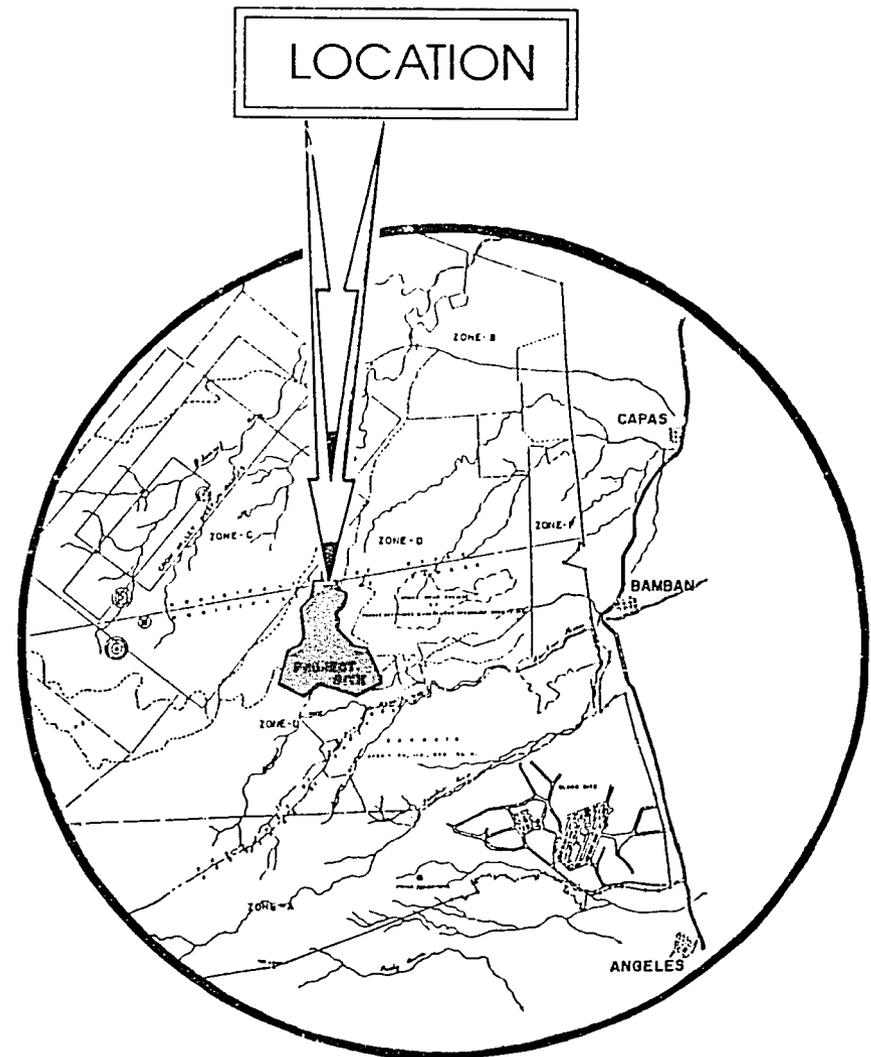
BACKGROUND AND HIGHLIGHTS

PICTURES - SEQUENCE:

VIEW OF THE PLACE BEFORE AND AT START OF PROJECT
COMPARATIVE SCENES AT FOUR (4) SPOTS WITHIN THE PROJECT SITE

Early months after start
Before Mt. Pinatubo's eruption
Just after Mt. pinatubo's eruption
Three (3) months after eruption

TREE's final report fulfills a contract requirement and expresses views of TREE. The USAID funded Natural Resources Management Program with DENR is reproducing TREE's excellently illustrated photo documentary. It clearly shows progress from reforestation plus the effect and subsequent recovery of different ages of vegetation from 14 to 22 inches of ash and pumice from the historic eruption of Mt. Pinatubo. In addition, innovative contracts, such as this one pioneered by DENR and USAID, with non-government and for-profit organizations was multiplied by DENR to more than 15,000 contracts (with families, communities, non-government organizations and for-profit companies) reforesting more than 225,000 hectares.



BACKGROUND AND HIGHLIGHTS

SALIENT FEATURES

ESTABLISHMENT PERIOD: 01 July 1988 to 30 September 1991

COST:

P 22,515,246.00 (US \$ 925,000.00)

FUNDED BY A GRANT FROM USAID

**ADMINISTERED BY THE RAINFED RESOURCES DEVELOPMENT PROJECT
(RRDP), and Region 3, DENR**

AREA: 1,000 hectares

- PLANTATION ESTABLISHMENT THROUGH
CONVENTIONAL REFORESTATION - 592 ha.
- ASSISTED NATURAL REGENERATION (ANR) - 204 ha.
- FIREBREAKS AND FIRELINES - 90 ha.
- AGROFORESTRY - 87 ha.
- ROADS, CAMP SITE, WATER DAMS, - 27 ha.

A T R E E S t o r y

The Inspiration

At a function attended by President Corazon C. Aquino, just after the historic EDSA Revolution, Oscar M. Lopez, president and chairman of the Board of First Philippine Holdings Corporation (FPHC) happened to be seated beside the President. And one of the topics being discussed during that time was the alarming extent of forest denudation caused by mindless and illegal logging.

The next day, Mr. Lopez was invited by the President to join a visit to the Asean-New Zealand Afforestation Project (ANZAP) at Mayantoc, Tarlac. Governor Daniel "Bitay" Lacson of Negros Occidental, who was also in the party, casually asked Mr. Lopez, "Of what use is this visit to you, Oskie?"

Mr. Lopez was both inspired and challenged by what he saw at Mayantoc. Forest denudation is a fact that we cannot ignore. He felt that even private corporations should get involved in a project like this and somebody has to take the initiative.

The Realization

In late 1986, the Department of Environment and Natural Resources (DENR) invited interested groups to participate and be pre-qualified in the reforestation program of the country. Oscar M. Lopez, whose group just regained control of First Philippine Holdings Corporation, responded to DENR's call.

In October 16, 1987 DENR informed FPHC of its pre-qualification. In November 15, 1987, DENR conducted a pre-bidding conference attended by 56 prospective contractors for 15 projects all over the Philippines and issued requests for technical proposals embodying the details of the project.

Out of the nine proponents for the Bamban Reforestation Project, FPHC's proposal was considered the most responsive and reasonable.

On June 9, 1988, FPHC created the Tarlac Reforestation and Environmental Enterprises, Inc. (TREE), a wholly-owned subsidiary, to implement the reforestation project.

As a manifestation of FPHC's commitment to social responsibility, FPHC directed TREE to start the project even without the formal documentations and financial arrangements to catch up with the planting season for the year.

The Memorandum of Understanding between DENR and FPHC/TREE was finally signed on July 21, 1988.

Project Description

The Bamban Reforestation Project consists of the following scope of work:

	Original Targets	As Revised & Completed
Forest Plantation Establishment Maintenance and Protection	725 has	592 has
Assisted Natural Regeneration (ANR)	100 has	204 has
Firebreaks & Firelines For Each Planting Block	20 has	90 has
Agroforestry Activities for Inhabitants	45 has	87 has
Infrastructure Works	10 has	27 has
-----		-----
T O T A L	1000 has	1000 has

The project was on a "Cost-Plus 10% Basis". Original contract cost was P 20,484,785 of which P 18,622,532 was the bare cost and P 1,862,253 the contractor's margin (10%). Subsequent revision due to increase of labor and materials raised the contract cost to P 22,694,359, bare cost to P 20,776,541 while the contractor's margin to only P 1,917,818 (9%). Duration to complete the project was 39 months, from July 1, 1988 to September 30, 1991.

USAID-Funded

The project is funded by a grant from the United States Agency for International Development (USAID) and administered by the Rainfed Resources Development Project (RRDP) of DENR. It is the policy of RRDP not to give advance payments to contractors- corporations which are "profit-oriented". However, advance payments were extended to contractors-NGOs', mostly foundations. Cost of money (interest) was not a reimburseable account.

TREE capitalized all expenses from start to finish. The company was assured that reimbursements would be fast because USAID makes the actual payments. This set-up, however, was more of a disadvantage to TREE considering that there are two sets of bureaucracies to go through before any reimbursements could be made, that of DENR and USAID.

Because of these bureaucracies, the formal contract was signed only in April 28, 1989. Billings were accepted only after this period. Since DENR's processing systems was not yet installed at the field, delays were long and frequent. The first reimbursement received by TREE was only in August 14, 1989, more than a year after the first expenses incurred in July, 1988.

FPHC has to advance funds which reached about P6.0 million before the first reimbursements. Processing time for the first billings took six months and was reduced later on to an average of three months. Average capitalization by FPHC/TREE for this delays during the entire duration of the project was about P2.0 million.

A Social Responsibility

Even at the start of the project, Mr. Lopez has emphasized that the Bamban Reforestation Project will be undertaken not for profit but as a manifestation of a social commitment to help improve the environment.

The 10% margin allowed in the reimbursement of actual expenses was not even enough to offset the cost of capital. Even during the periods where reimbursements could not be made, there was no let-up or slowing down of the project for financial reasons. Expenses submitted for reimbursements to DENR/USAID were all actual costs with emphasis on the best quality and maximum quantity that can be put in place.

Project Implementation

The project was divided into four (4) major components when implemented:

1. Nursery Operation
2. Infrastructure Development
3. Plantation Development
4. Community and Livelihood Development

Two (2) components were subcontracted with the approval of DENR. The Nursery Operations was subcontracted to the Better Farms and Gardens. Construction of the Infrastructure (roads, buildings/houses, dams, fire towers, etc.), to the Engineering and Construction Corporation of Asia, also a wholly-owned subsidiary of FPHC. All these were supervised by TREE and the representative of DENR, the Contract Supervisor, a licensed forester from the Community Environment and Natural Resources Office (CENRO) at Capas, Tarlac under Region III.

The bulk of the work was done by TREE. These consisted of the Plantation Development: reforestation through conventional planting, assisted natural regeneration (ANR), maintenance, protection, etc. and Community and Livelihood Development: agro-forestry activities, cooperative training and development, livelihood and skills training, etc.

The forest tree (climax) species were planted with a spacing of 4 meters by 5 meters or 500 trees per hectare. In between the climax species were planted nurse species to control weed growth and serve as companions of the forest trees while growing. In the 592 hectares, a total of 296,000 climax trees were planted.

There was no major problem in the implementation of the project. The staff of TREE were experienced and competent foresters. Minor problems like the attitude of the Aetas/Balugas towards work and their resentment towards augmentation workers from the lowlands were slowly but steadily corrected and smoothed-out.

Mt. Pinatubo's Eruption

As of May 31, 1991, TREE reported an overall accomplishment of 92.46% compared to the target or schedule of 92.37%. The eruptions of Mt. Pinatubo on June 12 & 13, 1991 caused a downpour of pumice stones, sand and volcanic ash in the area. Panic, fear and anxiety ensued. Most of the people evacuated from the mountains except for a few staff of TREE to protect the area.

The eruption of the next day resulted in a much heavier downpour and all the people fled from the place. Prior to the activity of Mt. Pinatubo, a management audit team composed of representatives of DENR and USAID conducted inspections. On May 29, 1991, the financial records were examined and found all in order. From June 3 to 8, 1991, evaluation of the physical accomplishments were conducted.

Survival rate of the plants was reported to be more than the required percentage; infrastructure were more than planned; the community and livelihood activities were in place; except for the ANR which needed more scrutiny, the evaluators were satisfied with what has been done. Overall accomplishment when the eruptions started was 93.80%. The target of 94.98% for the month of June could have been exceeded.

Rehabilitation

After the series of eruptions, several inspections and evaluations were conducted: first on June 20, 1991 by the staff of TREE, then by the Contract Supervisor on July 2, 1991 and finally by the representative of the Regional Executive Director, Region III on July 17, 1991. Serious damage were observed in the plantation. Volcanic debris from 14 to 22 inches thick covered the plants.

Everybody who went to the site believed that rehabilitation of the plantation and its infrastructure were necessary. A plan for rehabilitation was prepared and submitted to DENR which was approved and concurred by the USAID.

Emphasis of the rehabilitation for the remaining three-month period were on the plantation and on the existing infrastructure. Funds used for this plan came from the remaining balance of the contract cost after deductions of cumulative expenses prior to the eruption of Mt. Pinatubo.

Inventory after completion of the rehabilitation in September 30, 1991 showed survival average of 306 trees per hectare for areas planted in 1988 and 1989. Areas planted in 1990 showed average survival of only 112 trees per hectare.

Turn-Over

The reforestation contract expired on September 30, 1991. Before the date, the necessary inventories were conducted. Turn-over of the project to DENR, Region III were completed on October 4, 1991. The growing forest in the mountain of Bamban, Tarlac is now the responsibility of DENR.

Post Script

The established forest still need rehabilitation to bring it to planned targets. More urgent is the need to have this maintained and protected. DENR is still looking for funds to answer these needs.

PERSONALITIES

The Implementing Company (TREE)

Mr. Oscar M. Lopez - Chairman of the Board
Mr. Teodoro T. Distrajo - President
Mr. Ernesto A. Cadaweng - Manager

Sub-Contractor

Mr. Ricardo R. Villanueva - ECCO-Asia
Mr. Ernesto S. Mendoza - Better Farms & Gardens

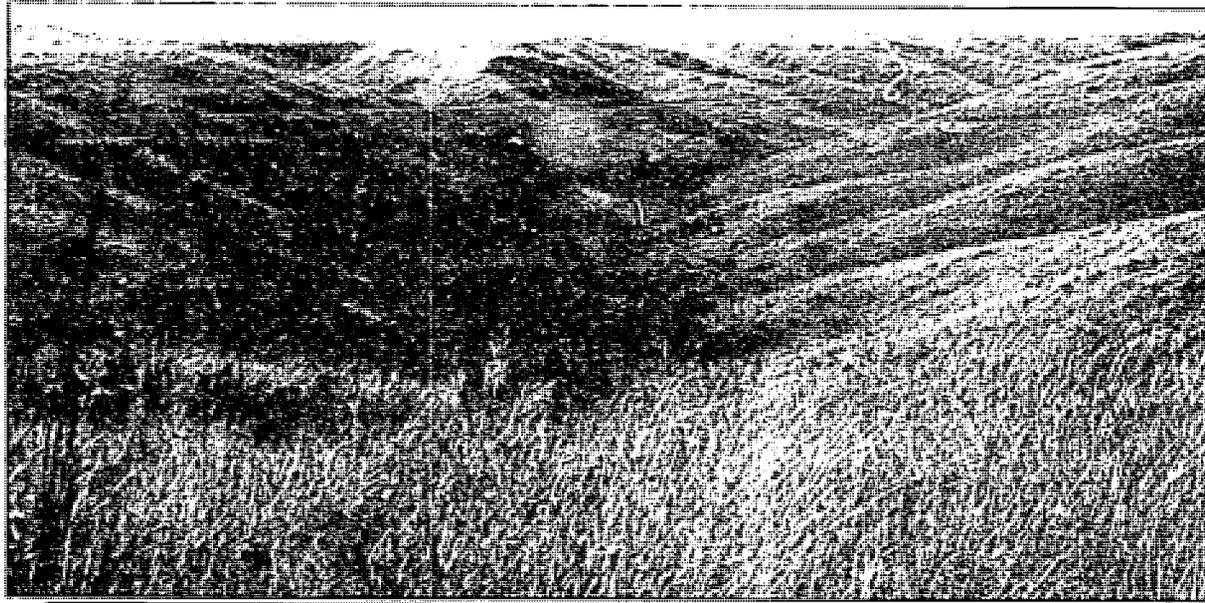
DENR

Mr. Fulgencio S. Factoran - Secretary, DENR
Mr. Victor O. Ramos - Undersecretary, DENR
Mr. Ricardo M. Umali - Undersecretary, DENR
Mr. Delfin Ganapin, Jr. - Undersecretary, DENR
Mr. Antonio S. Tria - Undersecretary, DENR
Mrs. Lirio T. Abuyuan, assistant Secretary, DENR
Mr. Edgardo A. Tan - RRDP-National Tech Coordinator
Mr. Antonio G. Principe - Regional Executive Director
Mr. Delfin Ganapin, Sr. - Regional Technical Director
Mr. Benigno Lumibao - RRDP Regional Coordinator
Mr. Iniego Tan - CENRO
Mr. Rodrigo R. Bacilig - Contract Supervisor

USAID

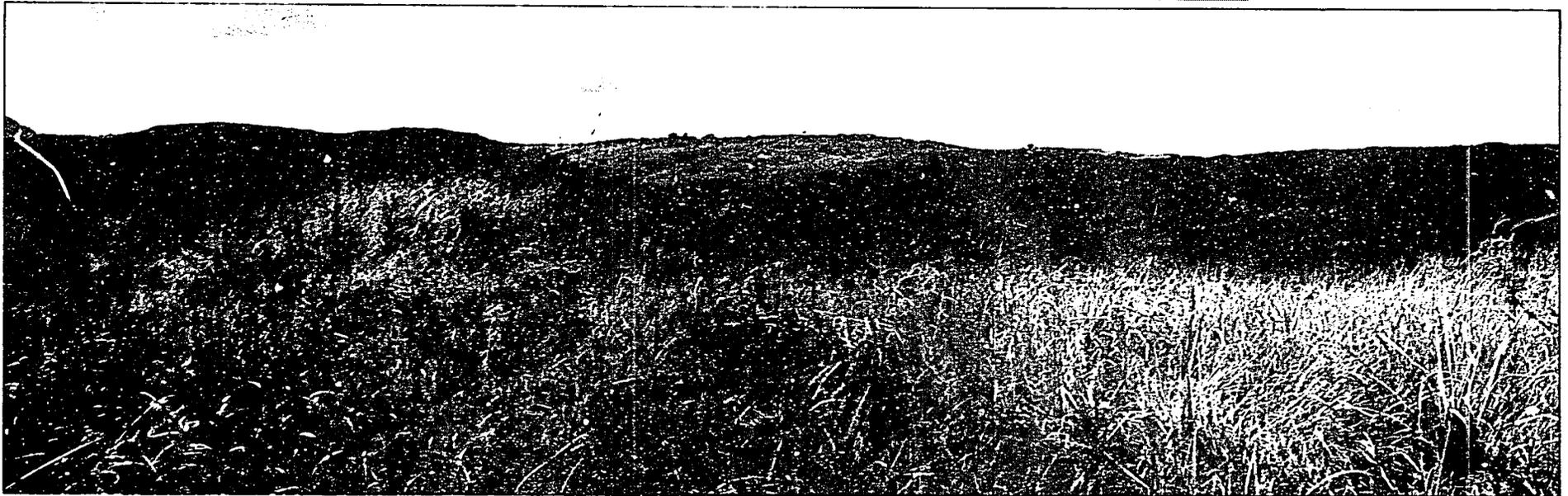
Mr. Malcolm Butler - Director, USAID
Mr. Kenneth A. Prussner - Chief, ONRAD
Mr. Abdul H. Wahab - Chief, Natural Resources Division
Mr. Kevin A. Rushing - Environmental & Natural Resources
Officer
Mr. Ed E. Queblatin - Program officer

THE
VIEW
OF THE
PLACE



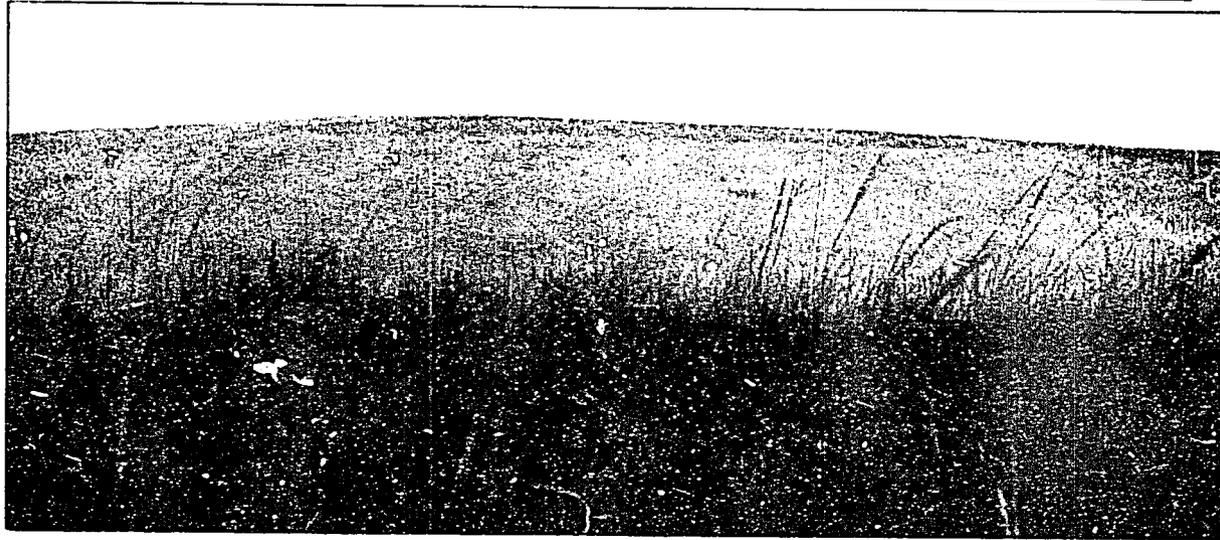
Denuded/openland at the Bamban Project during pre-operation surveys in June 1988.

BEFORE
START
OF THE
PROJECT

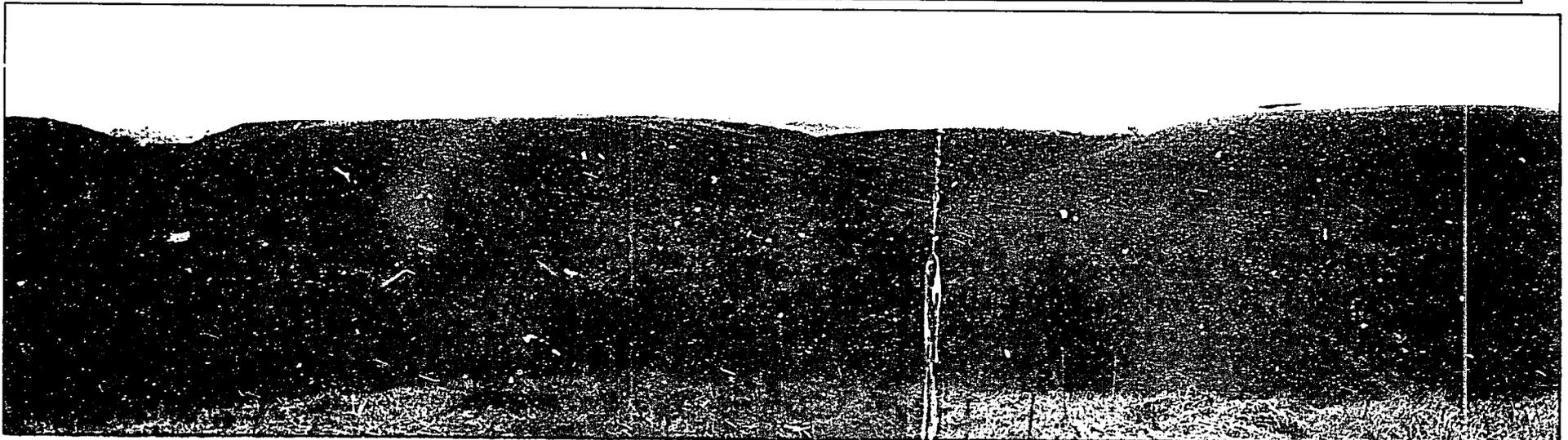


Marginal land in the heart of the Bamban Reforestation Project. Scene during the first inspection survey in June 1988.

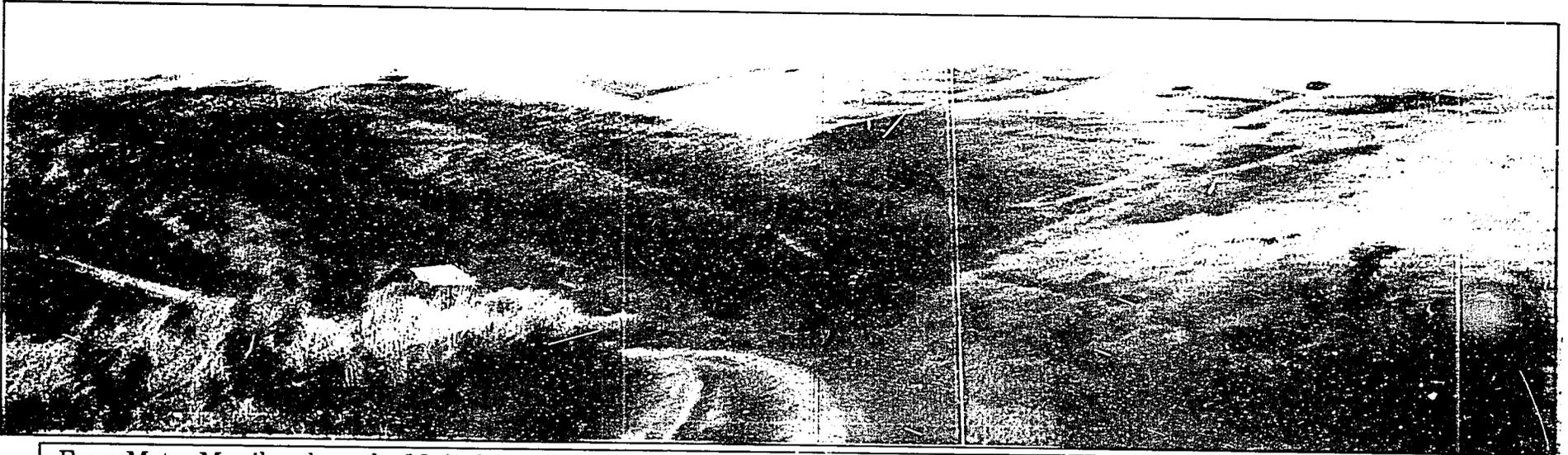
Foreground are grasslands at the center of the project site. These would be planted with forest tree species. Scene in August 1988.



The Reforestation Project with newly planted perennial and fast growing forest species. Scene in September 1988 two months after start of project.

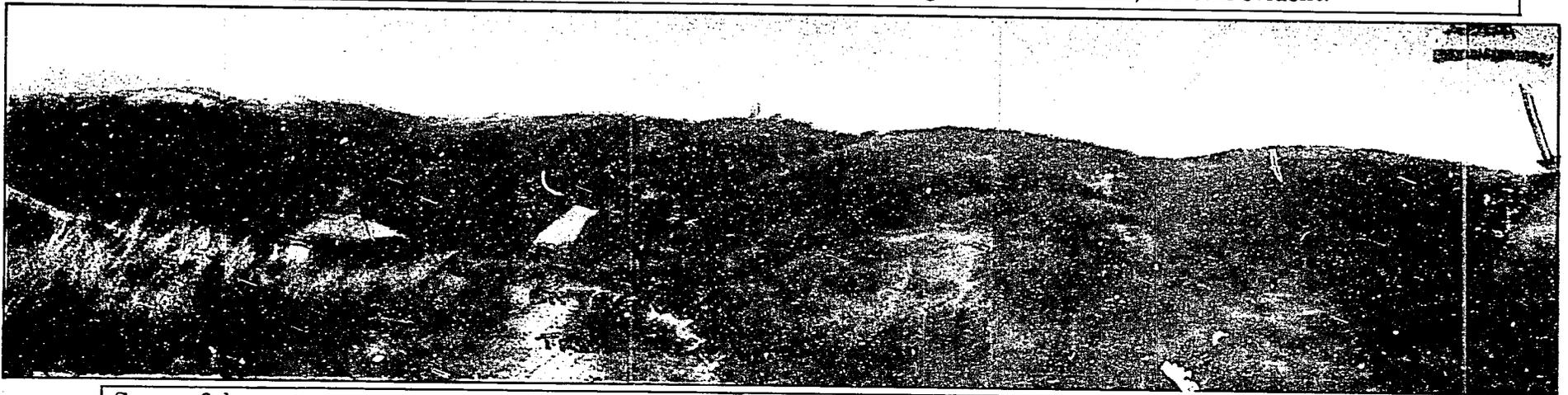


COMPARATIVE SCENES AREA I



From Metro Manila, along the McArthur Highway, after passing the town of Bamban, Tarlac one turns left at Barangay Anupul and travels along a 16 km partly paved, mostly graveled access road up to the mountains and finally, the entrance of the TREE area, the Bamban Reforestation Project.

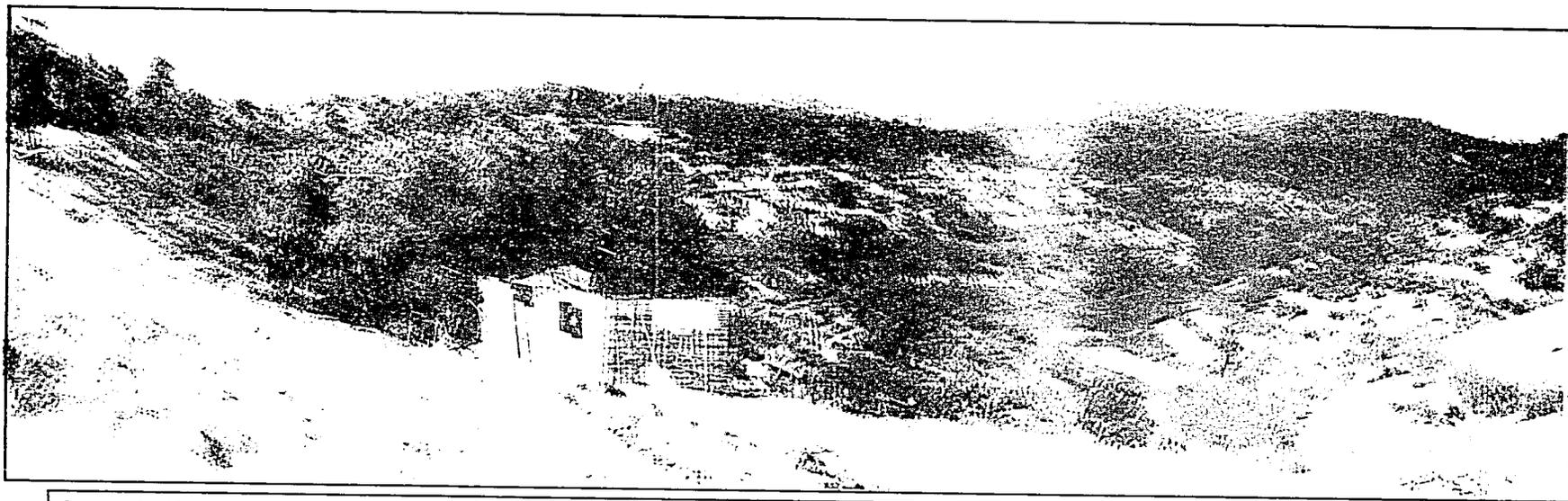
Scene in May 1989, 10 months after start of the project. Plantation has been established along contours. The green heavy lines are hedge rows planted to prevent soil erosion. Condition of the mountains, marginal and denuded, are still evident.



Scene of the same area in November 1990. The forest species planted during the rainy days of 1988 and 1989 are now visible. Growing trees here are: Narra, Mahogany, Gmelina arborea, Acacia mangium, Acacia auriculiformis, Kadios (nurse plants), Kakawate (firebreaks) and Bamboo at perimeters.

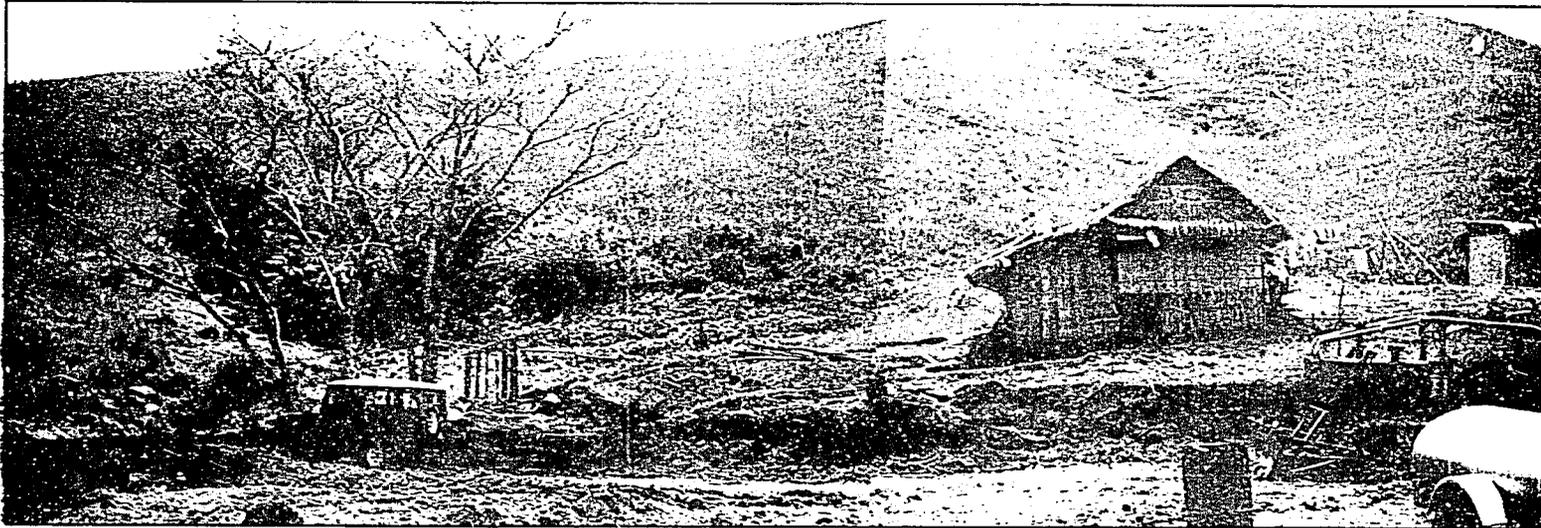


Scene in July 2, 1991 after the series of eruptions of Mount Pinatubo. Volcanic debris composed of pumice stones, coarse to fine sand and ashes started falling from the June 12 eruption onwards. The volcanic debris at this area range in depth from 14 inches to 22 inches.

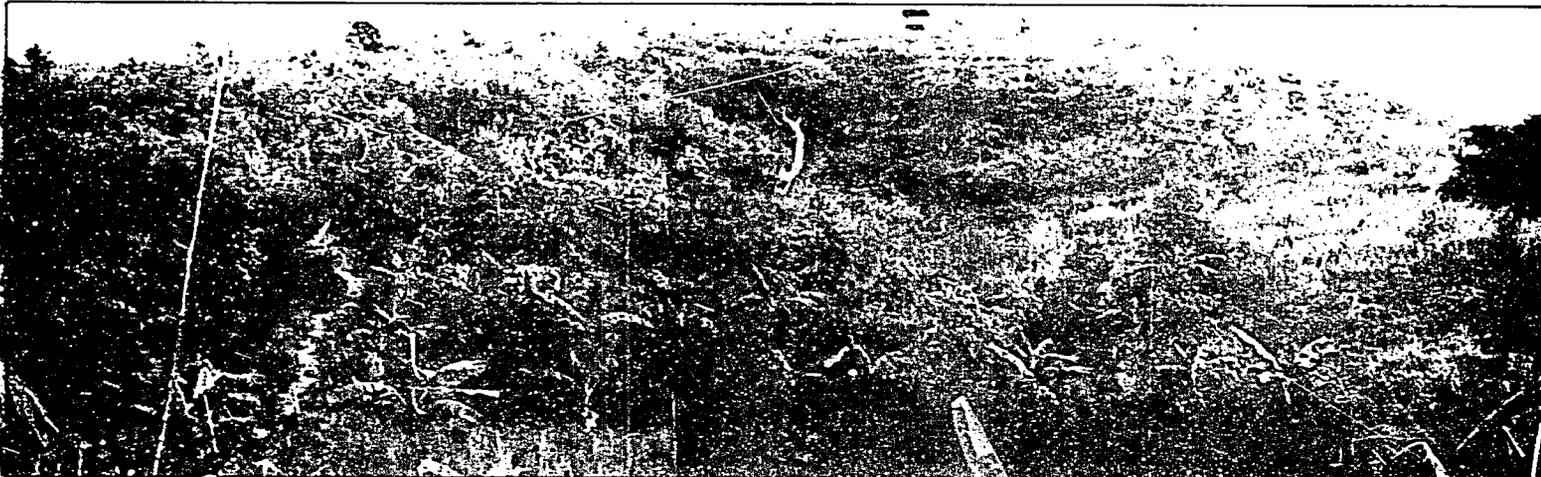


Scene in September 13, 1991. Some trees survived on their own but many needed rehabilitation work. Damaged observed were: broken trunks, broken branches, bent and partially covered, fully buried by the debris and heavy ashes on leaves. In this area survival after rehabilitation reached 60% of the original climax trees planted.

COMPARATIVE SCENES AREA II



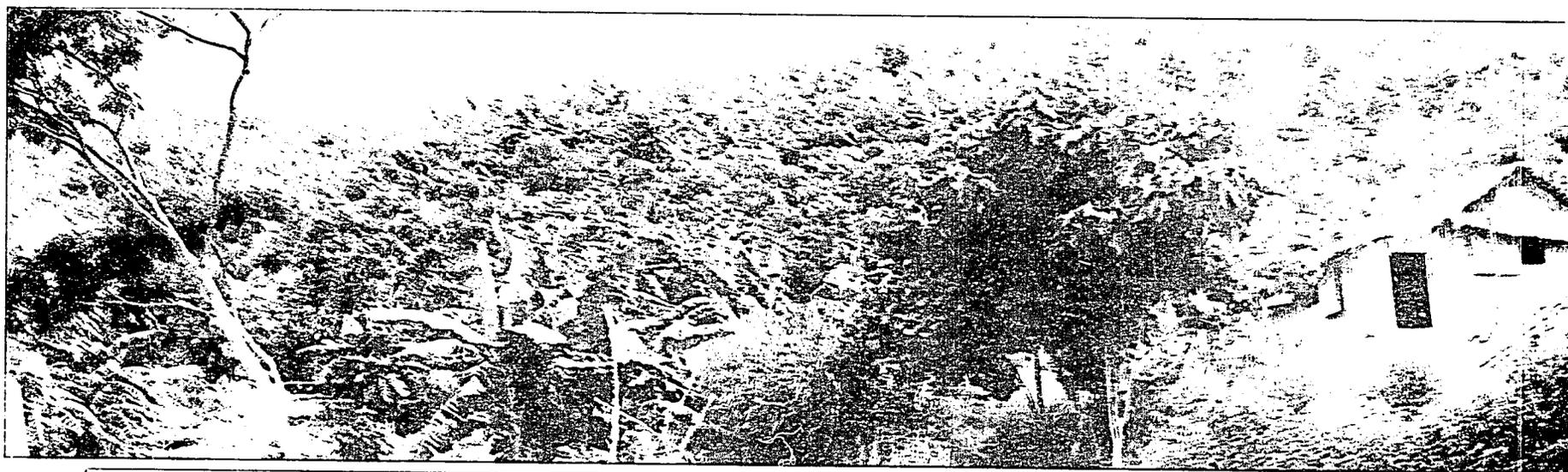
A scene in the central area of the project in May 1989. The plantation main road is just being constructed. The hut is a workers quarter. The dense vegetation at the left is the site of a spring, later developed to supply potable water year round. The mountain at the background was not yet touched. Seen growing are cogon grasses.



The mountain at the background as it appeared in November 1990. Some planted forest species: Eucalyptus, Mangium, Gmelina, narra, Mahogany, etc. are now visible while others are still hidden by grasses. Bananas, papayas, okra, bell peppers, etc. were also planted.



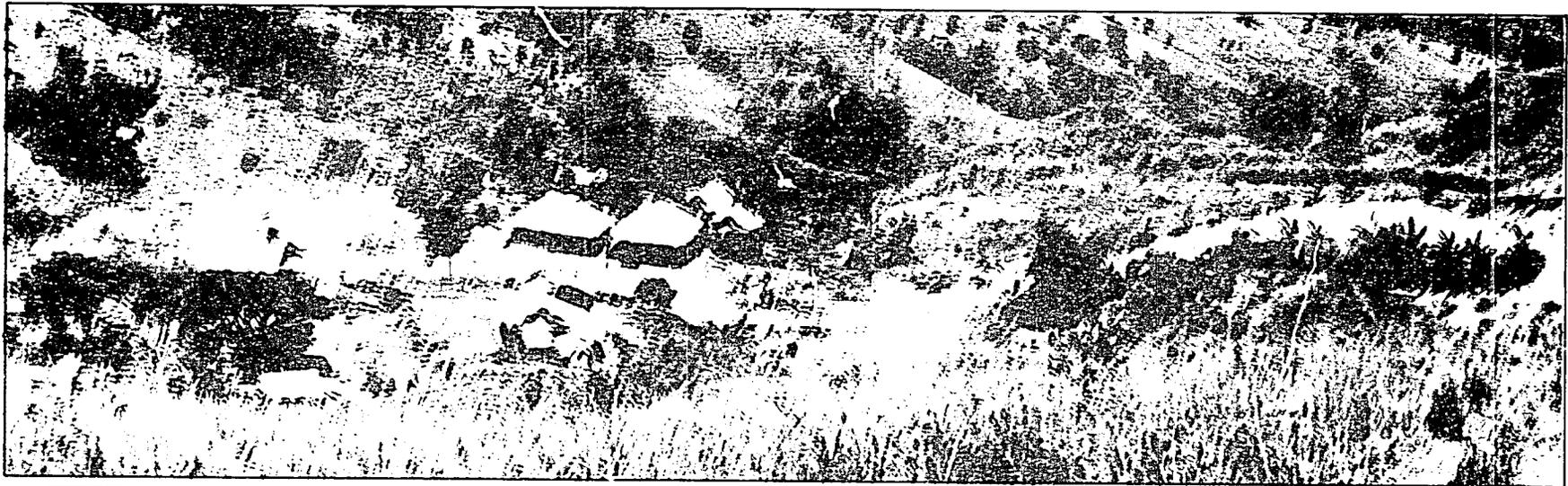
The same mountain scene in 2 July 1991. The volcanic debris from Mt. Pinatubo, from 14 to 22 inches deep, covered some plants, destroyed branches of others and caused leaves to fall or drop. The water from the spring, however continued to flow.



Three months after the eruption of the volcano in 13 September 1991, after rehabilitation efforts and plenty of rains, the plants sprang to life with vigor. It seemed as if fertilizers were fed at the roots. There is now a lush miniforest at this area. The bananas are healthy, the napier grasses are tall, even the lantana hedge rows (bottom right) are flowering.

COMPARATIVE SCENES AREA III

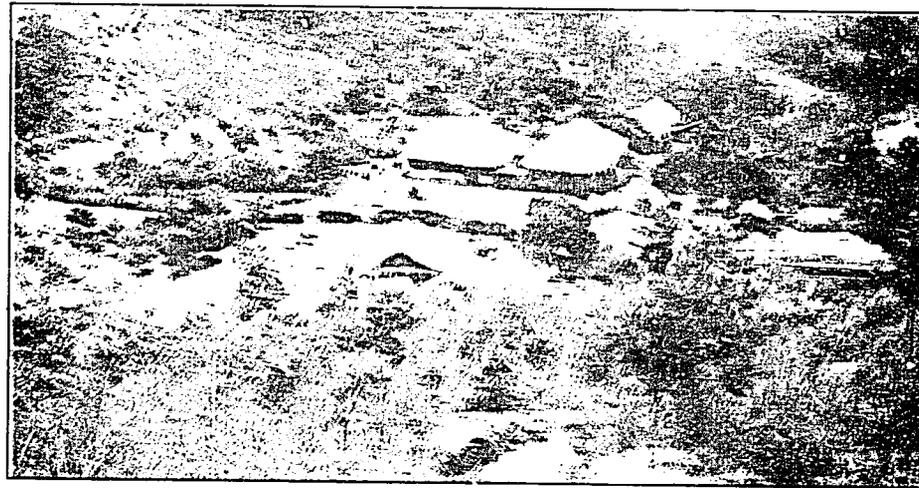
Campsite as of April 1990



The campsite in November 1990. Located here are TREE's field office, the motor pool, multi-purpose hall building, staff and workers quarters. The middle excavation lined with stones is a water impounding dam. At the background are spots of old forest stands. The spaces between the remnant forests are sites where the reforestation method called "assisted natural regeneration" (ANR) is employed.

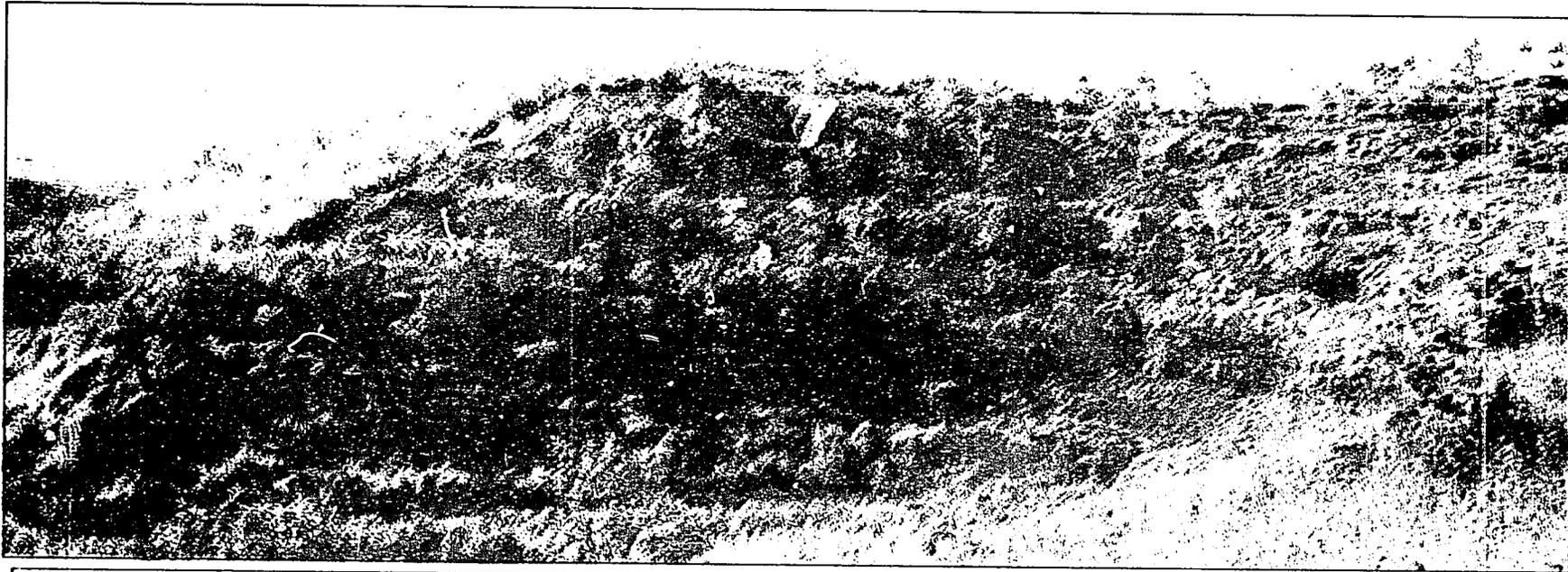


The same camp site in 2 July 1991. Volcanic debris from Mt. Pinatubo are seen on the roofs of houses, on the roads, filling the water impounding dam, covering the vegetable gardens and everywhere. The structure at the left (colored orange) used to be the multi-purpose building.



Picture taken in 13 September 1991 of the camp site. The vegetable garden beside the workers quarters remained bare, the plants covered by the volcanic debris were not able to survive. The forest species, however, especially those not totally covered have sprung to life. The remnant forests aided by ANR are showing signs of expansion.

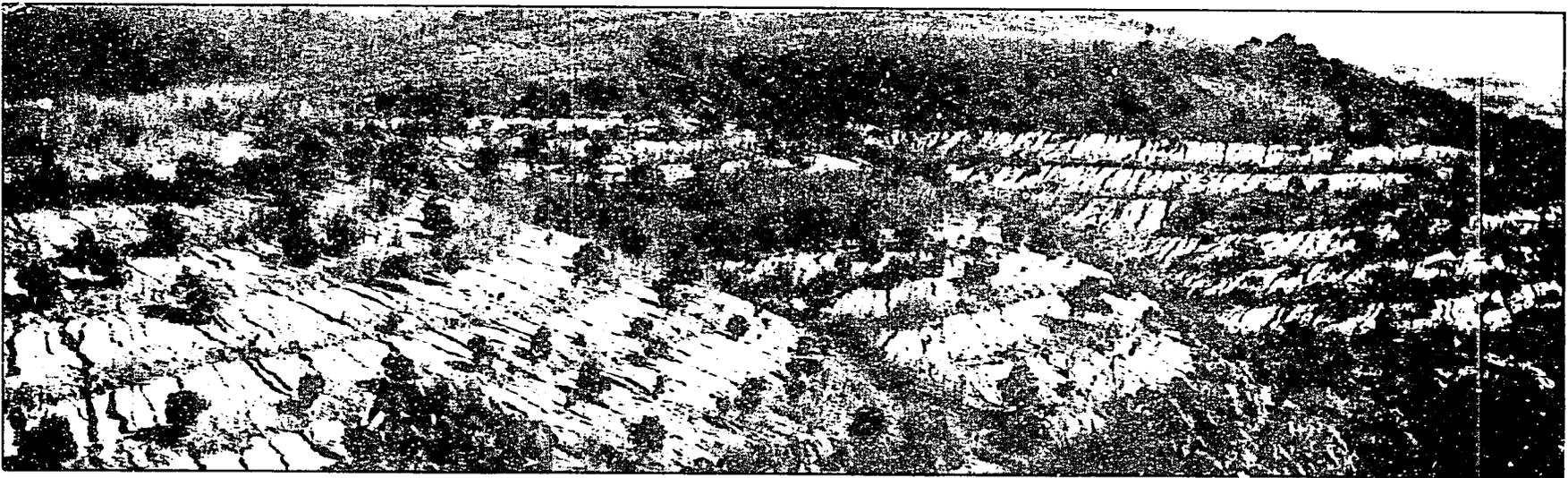
COMPARATIVE SCENES AREA IV



This area, pictured in April 1991, shows growing forest species planted during the rainy season of 1990. This became the experimental site of maintenance called "Income Enhancement Planting" (IEP). Compared to the normal method of ring weeding, the idea was to completely remove all grasses and weeds in-between the growing trees and to plant cash crops which will not compete with the principal trees for nutrients. By the total clearing of spaces it was observed that growth of the trees were much faster than those maintained by ring weeding only.



This is the same IEP area as in the preceding picture but taken at another angle. Planting of the cash crops has not been completed because of Mt. Pinatubo. This scene in 2 July 1991 shows the cleared area covered with volcanic debris. Most of the leaves of the planted trees had fallen or withered because of the heat.



In 13 September 1991 (date of the picture). Approximately 60% of the planted forest species in this IEP area recovered and has grown new foliage. The others perished along with the cash crops on the cleared spaces now with caked volcanic ash. The species *Gmelina arborea* again showed its resiliency and dominated the surviving plants, shown close (tops) and some *Agohos*.