

Evaluation Report No. 8
1979-80



GOVERNMENT OF MEGHALAYA

**EVALUATION STUDY ON
APPLIED NUTRITION PROGRAMME IN THE STATE**

DIRECTORATE OF ECONOMICS, STATISTICS AND EVALUATION
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INTRODUCTION

The Twenty Sixth Round of the National Sample Surveys (July 1971 - June 1972) on Calorie and Protein value of food items consumed per consumer unit showed that in Meghalaya 61% of the households in the rural area and 52% in the urban area got less than the recommended minimum of 2700 calories per day. The corresponding all - India figures of house holds below this level was 49% and 56 % respectively. This deficiency in calorie intake was not solely due to poverty but also, and perhaps as much, to ignorance in the choice of foods and feeding practices that could otherwise involve little or no extra expenses for the family to improve its nutrition status. It was, therefore, against this background that a programme known as the "Applied Nutrition Programme" (ANP) was launched with a view mainly to educating people about the production and consumption of locally available food items.

1.2 Background : The AN Programme was instituted with the adoption of a Master Plan of Operations in February 1963. Since then, it was implemented all over India in collaboration with UNICEF. In Meghalaya, the programme was in operation in one block since 1965-66 when the State was part of composite Assam. By 1978-79, 21 development blocks of Meghalaya had been covered under the Applied Nutrition Programme. There after up to 1980-81, no new block was allocated for the Programme and the number of ANP blocks remained at 21 out of a total of 24 blocks. Of these 21 ANP blocks, 9 blocks were in operational or pre-operational stage, that is, a stage in which the ANP was in operation for not more than 5 years; 7 blocks were in the post-operational period stage, in which the ANP had been operating for more than 5 years but not exceeding 10 years; and 5 blocks had already completed the post-operational period stage, (List of the ANP Blocks is at Appendix-I).

1.3 The specific objectives of the ANP were mainly :

- (i) to educate mothers, school children and other members of the village community about the types and quantities of food that should be consumed;
- (ii) to encourage the production of pulses, leafy vegetables and fruits which could provide the needed nutrients especially those which could be grown by the beneficiaries themselves;
- (iii) to encourage production of foods of animal origin at family, school and community levels where feasible in terms of financial resource and home culture;
- (iv) to encourage the more scientific methods of storage and preservation of foods to prevent wastage and losses;
- (v) to bring home to the beneficiary the knowledge on the hygienic preservation and preparation of foods which retained the nutritional value of food ;
- (vi) to utilize part of the foods produced under the programme for feeding of young children especially those affected by malnutrition.

1.4 Strategy of Applied Nutrition Programme:

The ANP provided a plan of action that, inter alia,

- i) must relate directly to the specific objectives;
- ii) should refer to the three interrelated components viz. nutrition education, food production and food consumption;
- iii) production of vegetables should be emphasized more than those of animal origin which was more difficult and more expensive;
- iv) demonstration of the use of locally available foods as feeding component of the programme.

1.5 I. Nutrition education was to be provided by

- (a) Block personnel;
- (b) Medical and paramedical staff of the P.H.C., and
- (c) School teachers.

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1.6 II. For production of (A) of FOODS OF PLANT ORIGIN i.e. pulses, oil seeds and vegetables and fruits which form good source of vitamin three types of gardens were laid down, viz.

(a) Kitchen gardens on which the emphasis was given as they were potentially important in promoting self-reliance to the family;

(b) School gardens on condition of :- (i) availability of land close to the school as well as water for irrigation; and (ii) pupils willingness to look after the garden.

(c) Community gardens to be run by the voluntary organisations in the village such as Youth Clubs and Women Welfare Organisation.

1.7 (B) FOODS OF Animal Origin : included were schemes like (a) Family Poultry; (b) Village Poultry Unit in which 200 to 500 birds producing egg might be supplied to small farmers' schemes, co-operatives or other appropriate operation groups; and (c) Fish ponds.

1.3 IIT Feeding : The foods produced under the programme would not necessarily provide the food supplements to the beneficiaries to the full extent unless prepared and fed in proper way.

Therefore, the feeding programme under ANP was to be regarded as a principal means of practical demonstration to mothers and children.

1.9 Involved Departments : The implementation of the ANP was to be spear-headed by the Community Development with the full support of Agriculture, Animal Husbandry and Veterinary, Fishery and Health Departments each in the respective field. Co-ordination at the State level rested with the Community Development

Department. The Director of Community Development was incharge of over-all administration of the programme and was assisted by a Special Officer for nutrition in the department.

1.10 To ensure co-ordination among the implementing Departments, a State Level Nutrition Co-ordination Committee was constituted in 1975 with the following :-

Development Commissioner - Chairman

Representatives of the involved Departments viz., Agriculture, Animal Husbandry and Veterinary, Fishery and Medical and others - Members

Special Officer for Nutrition (now designated as Asstt. Director for Women and Children) Community Development Department - Member - Secretary.

Terms of reference : As modified in 1978, the function of the committee was to advise, co-ordinate and review the Applied nutrition programme in the State including the Integrated Child Development Scheme.

1.11 At the District level, the district officers of the involved Departments. checked and passed the schemes on ANP. The Deputy Commissioner presided over the District Level Nutrition Co-ordination Committee.

1.12 Block level : The Block Development Officer (BDO) held an overall charge of the implementation and supervision of the project at Block level. He was assisted by the Extension Officers viz. Veterinary Extension Officer, Agricultural Extension Officer and Social Education Organiser including Lady S.E.O. They together with the B.D.O. and the Medical Officer of the local PHC constituted the Block Level Co-ordination Committee.

- 1.13 Financial implication : During the first five years of operational period, an ANP Block was to get the sum of Rs.1,10,000 annually financed both by the Central and the State Governments. The State Government's share was contributed by the Community Development and the implementing Departments pooling the same in the Community Development budget. Over and above, a UNICEF assistance, (generally in kind) was made available to the ANP Block to the extent of Rs.1,80,000 for the entire 5 years operation period. During the next 5 years of post-operation an amount of Rs.1,16,000 was allotted to the ANP Block from different sources. A financial involvement in an ANP Block is shown in detail at Appendix II.
- 1.14 Need of Study : An evaluation study of the Applied Nutrition Programme was taken up at the instance of the State Nutrition co-ordination Committee in their meeting held sometime during 1980.
- 1.15 Objectives of the study : The study was undertaken with the following specific objectives :-
- i) To study the implementation of the three components of the programme viz. (a) Nutrition education (b) Food Production and (c) Food consumption :
 - (ii) To examine the respective role played by different involved agencies ;
 - (iii) To study the present position of the production units set up under ANP ;
 - (iv) To find out how far the beneficiaries of production units had furthered the programme on their own; and
 - (vi) to assess the general impact of the programme in (a) food production of plant and animal origins and (b) food consumption and diet habit of the villagers.

1.16 Methodology of study : For the purpose of this study five ANP Dev. Blocks considered best from the ~~standpoint~~ of implementation were obtained from the Community Development Department. The selection was that at least one of the 5 Blocks should come from each of the three stages of operational period classified at 1.2 paragraph. Two out of the ANP villages under a selected ANP Block were selected at random. Likewise, a random selection of 10 households of a selected ANP village was made to collect primary data at household level.

1.17 Voluntary organisations/schools/Communities engaged in any production or feeding under the programme in the selected villages were identified and a questionnaire was canvassed to them. The village headmen's views were also obtained regarding the performance of the programme in the village.

1.18 Tools of the study

The following tools were developed for undertaking this study:-

1. Block level schedule.
2. Voluntary Organisation/Community/School level schedule.
3. Household Schedule.
4. Guide points for discussion at State level and with local headmen.
5. Guide points of observations at grass-root level.

1.19 Limitations of the study : The main handicap of the study arose from the inability of the household level respondents of post operational blocks to furnish required data .

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II. State and Project Levels

2.1 Staff. At the ~~State~~ level, the Director of Community Development and the Asstt. Director (W & C) carried out the day to day administrative functions on ANP in addition to their normal duties. The establishment staff of Community Development Directorate provided the ministerial support to the ANP. At project level the Block Development Officer was in overall charge of the programme. The other staff involved in ANP are shown in Table No.2.1.

2.2 Staff Training : There was arrangement for training different functionaries in various spheres of ANP both at State and Project levels. Elaborate Syllabi were framed for different courses on ANP. But of the two development blocks which responded to our enquiry only a Block Dev. Officer of one block reported to have attended a training course on ANP.

Table 2.1

Particulars of staff at Project level engaged in ANP works.

Sl. No.	Designation	If trained under ANP, training course and the period of training.			
		Nongstoin	Danbu- Rong- ijeng	Danbuk- Aga	Mawryngkeng Myllien
1.	Block Development Officer (B.D.O)	for short period	Nil		
2.	Extension Officer	Nil	"		
	i) Agriculture	"	"		
	ii) Veterinary	"	"		
	iii) Industries	"	"		
3.	Social Education Organiser (S.E.O)	"	"	N.A.	N.A.
4.	Lady S.E.O.	"	"		N.A.
5.	Sub-Inspector of Statistics.	"	"		
6.	Gransevaks	"	"		
7.	Gransevikas	"	"		
8.	Sub-Engineers	"	"		

2.3 Participation of other Departments : The involved Departments like Agriculture, Animal Husbandry and Veterinary Departments participated directly in the implementation of the Programme through their respective Extension Officer posted in the block concerned. It was reported that frequent transfer of these Extension Officers seriously retarded the smooth execution of the different schemes of the ANP. The involved departments as stated earlier also contributed finance towards the implementation of ANP schemes on the basis of apportionment laid down in the APPENDIX -II. The State Level Co-ordination Committee constituted for the purpose of co-ordinating the functions of different departments did not meet during 1981-82. Further, there was no indication that the resolutions of the Committee had received prompt attention of the concerned departments for effective implementation. This included the Community Development Department itself. At Block level, there existed a sort of a consultative committee between the Block Development Officer and the Extension Officers for the entire activities including those of ANP.

2.4 Criteria for Selection of Dev. Block and Villages : Among many criteria laid down for consideration in selection of a development block for ANP, one related to economic and nutritional backwardness of the area. Thus tribal development blocks readily lent themselves for eligibility and should receive priority. Since all the blocks in the State are also tribal development blocks, any block equally qualified as being an ANP Block. With regard to criteria for selection of villages only one block furnished this information. The points of consideration in selecting the villages were (1) population (2) people's responsiveness (3) size of children population.

2.5 (a) Sample development Blocks : The particulars of the blocks taken up for study are shown at Table 2.2. These blocks were selected on the consideration of being the best from the standpoint of their performance in the implementation of the Applied Nutrition Programme.

Table No.2.2.

Population etc. of the selected ANP Blocks

Sl. No.	Name of ANP Dev. Blocks.	District	Operating year of ANP	No. of Population.	Total No. of villages	ANP village (1981-82)
1.	Nongstoin-Sonapahar.	West Khasi Hills	1976-77	72,940 (1981)	446	46
2.	Danbu-Rongjeng	East Garo Hills	1978-79	44,122	225	20
3.	Danbuk-Aga	West Garo Hills	1975-76	15,603 (1981)	106 (1981)	56 upto (March/80)
4.	Myllien	East Khasi Hills.	1970-71	87,415 (1971)	N.A.	
5.	Mawryngkneng	East Khasi Hills	1978-79	29,478 (1971)		

2.5. (b) According to Table 2.2 it is to be observed that the Danbuk-Aga Development Block and the Nongstoin-Sonapahar Development Block entered the Post-operational stage in 1980-81 and 1981-82 respectively. Two other blocks under operational period were Danbu-Rongjeng and Mawryngkneng Development Blocks. Thus, our sample consisted of 2 blocks each under operational stage and past-operational stage and one block (Myllien) already having passed the post-operational stage. Owing to in-sufficient information, no comparative study could be attempted regarding the extent and coverage achieved in population and village by each block.

Food production programme

2.6 Schemes : The Food Production schemes of ANP introduced in the State covered schemes of agriculture, animal husbandry and fishery. The particulars pertaining to the implementation of the food production programmes were called for from the above five mentioned blocks. It was, however, regrettable that only two of them furnished the required information. Failing to get necessary information from the primary sources (i.e. Development Blocks), attempt was made to obtain the same from the Monitoring and Evaluation Cell of the Directorate of community Development Department. As such, the assessment of the execution of the food production schemes presented in this report was based on the information as received from the two blocks (namely Hongstein-Sonapahar and Dambuk-Rongjeng) and whatever data as could be collected from the Monitoring and Evaluation Cell of Community Department.

Production of foods of plant origin

2.7 ANP Gardens : For the production of foods of plant origin, three types of gardens were set up viz. (1) Community Garden by the village Committee/Durbars (2) School/Medium Size Garden by the local schools/Voluntary Organisations and (3) Kitchen Garden by individual households. The last category was found only in Hongstein-Sonapahar Block and absent in other blocks. The area of Community garden was around 1.21404 hectares (.....acres) and that of Medium-sized/school, garden 0.40468 hectares (.....acres). The number of community gardens, school/medium-sized gardens and kitchen gardens upto 1980-81 was respectively 16, 181 and 20. Table No. 2.3 showed that Hongstein-Sonapahar development block raised as many as 150 school/medium-sized gardens as against 24 in the case of Dambuk-Aga Development Block both being in the post-operational period.

Table No. 2.3
Category-size no. of AID Gardens
(upto 1981-82)

Sl. No.	Development Block	Community Garden	School Medium sized	Kitchen	Total	Remarks
1.	Tongstoin-Sonapahar	3	150	20	173	* As obtained from Monitoring & Evaluation Cell of C.D. Deptt.
2.	Danbo-Rongjeng	3	7	Nil	10	
3.	Danbuk-Aga	10	24	Nil	34	
4.	Myllion	N.a.	N.A.			
5.	Mawkyngmang	4	3	Nil	7	
TOTAL :		20	184	20	224	

2.3 Inputs : Seed for vegetables and fruit trees was made available free of cost to the agencies by the blocks procuring the same from Government farms. Beside seed, fertilizers, insecticides were also supplied to some production units. There was no mention of fencing materials though some units had indicated to have received the same. Distribution of inputs by items is shown in Table 2.4. The Table showed that in three blocks the total quantity distributed during the period from 1976-77 to 1980-81 was vegetables seed. 1.07 quintals and 4693 packets; fruit tree sapling/suckers - 63803 numbers; fertilizer - 106. quintals; insecticides - 3.00 quintals and 72 packets. Though Danbo-Rongjeng block had stated nil quantity in respect of seed for fruits, the production agencies contacted on the other hand reported to have received these inputs from this block.

Table No. 2.4

Inputs distributed by the Dev. Blocks under ANP.

Name of Dev. Block	During	Veg. Seed	Fruit seed	Fertilizers	Insecticides
1. Nongstoin-Sonapahar	1976-77 - 1980-81 = 4 years	1.07 qt. 3608 (pkts)	62,713	32.25 qt.	72 (pkts)
2. Danbo-Rongjeng	1978-79 - 1980-81 (2 yrs)	1085	Nil	58.45 qt.	2.91 qt.
3. Dambuk-Aga	N.A.	-	N.A.	-	-
4. Myllien	N.A.	-	N.A.	-	-
5. Mawryngkneng	1978-79 - 1980-81 (2 years)	-	1090 Nos.	16 q t.	9 Kg.
	1976-77 - 1980-81 (4 years)	1.07 qt. 4693 (Pkts.)	6,3803 Nos.	106.70 qt.	3.00 q t. 72 (Pkts.)

* As furnished by Monitoring & Evaluation Cell of C.D. Department.

2.9 Financial implication : The financial involment of the Development blocks for ANP is shown in Table No 2.5. It is to be observed that for the entire 5 years of operational period the total expenditure incurred by the Nongstoin-Sonapahar Development Block aggregated Rs.205.01 thousand under horticulture production programme. This worked out to an average annual expenditure of Rs.41.00 thousand. Similarly in the case of Danbo-Rongjeng, the 3 year total was Rs.138.00 thousand giving an average of Rs.46.00 thousand per year. This expenditure picture was compared to the Financing Pattern of the ANP as at Appendix II. The financing scheme stipulated an annual sum of Rs.52.00 thousand during the 5 years of operational period (excluding the provision of Rs.49.50 thousand to be supplemented mostly in kind during the period by the UNICEF). Against this pattern, Nongstoin-Sonapahar Development Block had fallen short by Rs.11.00 thousand and Danbo-Rongjeng Block by Rs.6.00 thousand.

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Table No. 2,5
Expenditure on Agriculture (AUP)

Sl. No.	Name of Block	Expenditure (Rs. 000)					Total
		1975-76	1976-77	1977-78	1978-79	1979-80	
1.	1.	2.	4.	5.	6.	7.	8.
1.	Wongstoin-Sonapahar	-	30.50	41.00	45.00	52.25	166.26
2.	Danbu-Rongjeng	-	-	-	36.00	66.00	36.00
3.	Danbuk-Aga						
4.	Myllien						
5.	Mawryngmaeng						
		30.50	41.00	81.00	1,18.25	72.26	343.01

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Food production of animal origin

2.10

Poultry : Poultry keeping was one of the schemes undertaken under the Programme for production of foods of animal origin. Through discussions with some Block Development Officers it was learnt that the distribution pattern for birds depended on the type of agencies. For group beneficiary, one unit consisted of 100 birds at sex-ratio of 20:80 while for an individual beneficiary the number of birds was 10 only with the same sex proportion. Due to insufficient data it was impossible to know how far these norms had been observed in actual distribution. The material furnished by the Monitoring and Evaluation Cell of C.D. Department concerning of Danbuk-Aga, however, suggested that at least in this block the distribution had by and large conformed to the norm. Table No.26 showed a total of 2,064 nos. of birds distributed during 1975-76 to 1980-81 in 4 development blocks.

Table No.2.6
Poultry Units and number of birds distributed under
ANP (1976-77 - 1980-81)

Dev. Block	Period	No. of units			No. of birds		
		Volun- orgn.	Indivi- duals	Total	Volun- Orgn.	Indi- viduals	Total
Hongstoin	1976-77 - 1980-81	N.A.	N.A.	15	258	586	844
Dambo-Rongjeng	1978-79 - 1980-81	1	12	13	N.	A.	340
Dambuk-Aga	1975-76 - 1980-81	5	16	21	500	160	660
*Mawrynglunong	1978-79 - 1980-81	-	-	3	-	-	220
Myllien	1970-71 -	N.A.					
Total	1975-76 - 1980-81	52			2064		

*Source : Monitory & Evaluation Cell of Community
Development Department.

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- 2.11 Piggery : The number of pigs distributed by the Nongstein-Sonapahar Development Block during the period from 1978-79 to 1980-81 totalled 128 and by Mawryngkneng Development Block only 6 (and that was in 1979-80). The two sample villages of Nongstein-Sonapahar Development Block, however, were not among the beneficiaries for piggery units. So also was the case of Mawryngkneng Development Block. The year-wise distribution is shown below.

Table No.2.7
No. of animals distributed under ANP.

Dev. Block	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	Total
Nongstein-Sonapahar	-	-	-	30	40	8	128
Danbo-Rongjeng	till	1980-81	the scheme was implemented				
Danbuk-Aga	NA	NA	NA	NA	NA		
*Mawryngkneng	NA	-	-	-	6		6
Myllien	NA	NA	NA	NA	NA		

N.B. N.A. = No information available.

* Monitoring & Evaluation Cell, C.D. Developments.

- 2.12 Expenditure : The financial implication of Animal Husbandry and Veterinary programmes is shown in Table 2.8. The figures included for both poultry and piggery production where these two schemes were introduced. No separate figures for these two programmes were available. The figure against Danbo-Rongjeng however, related solely to poultry as this block had not taken up piggery so far. It was observed that the total expenditure incurred during the 5 years of operational period was Rs.120.00 thousand each for Nongstein-Sonapahar and Danbuk-Aga Development Blocks. This worked out to Rs.24.00 per year. as against Rs.28.00 targetted annually under financing pattern of the ANP.

Table No.2.8
Expenditure incurred on Animal Husbandry and
Veterinary (ANP)

Dev. Block	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	Total
Wongstoin-Sonapahar	-	34.00	24.00	24.00	19.00	19.00	120.00
Danbu-Rongjeng	-	-	-	18.00	33.00	13.00	69.00
Danbu-Aga	24.00	24.00	27.00	27.00	18.00	-	120.00
Mawryngkneng Myllien	-	N.	A.		N.A.	-
Total :	24.00	58.00	51.00	69.00	70.00	37.00	309.00

* Monitoring & Evaluation Cell, C.D. Department.

2.13 Pisciculture Tanks etc. : (a) Fishery formed another ~~Ston~~ of food production scheme under ANP. Fish tanks were raised by beneficiaries with financial assistance from the Government. The number of tanks by category of beneficiaries could not be presented for want of relevant data. So also was the area coverage the tanks created. Fingerlings were distributed to the beneficiaries free of cost.

Table No.2.9
Number of fish tanks and fish seed distributed
during 1975-76 to 1980-81

Dev. Blocks	No. of tanks			Total Area	Fish seed (hec- distributed tares (Nos.)	Average No. per tank.	
	Con.	Volum.	Indivi- dual				
Wongstoin- Sonapahar	5	-	-	5	2.5	1,01,150	20,230
Danbu-Rongjeng	-	-	-	8	N.A.	12,000	1,500
Danbu-Aga	-	-	-	11	N.A.	24,000	2,182
Mawryngkneng	5	6	-	11	N.A.	26,000	2,366
	10	6	-	35	2.5	1,63,150	4,661

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(b) According to data furnished by the blocks concerned and the Monitoring and Evaluation Cell, the total number of fish tanks created under the ANP during 1975-76 to 1980-81 in the four blocks was 35 and fingerlings distributed totalled to 163,150. The average number of fish seeds stocked per tanks works out at 4,661. In Nongstoin-Sonapahar Block the average was 20230 seed fish.

- 2.14 Financial expenditure : Figures incorporated in Table No. 2.10 showed that during the 5 years of operational period, Nongstoin-Sonapahar incurred Rs.14.00 thousand annually on fishery production as against the annual provision of Rs.22.00 thousand envisaged in the financing pattern of the ANP. Danbo-Rongjeng has spent Rs.53.00 thousand for the 3 years time of the operational stage or Rs.21.00 thousand per year on an average.

Table No.2.10

Expenditure incurred on pisculture (ANP) (during 1976-77 - 1980-81)

(Rs.'000)

Development Block	No. of tanks	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	Total
Nongstoin-Sonapahar	5	-	14.00	14.00	14.00	14.00	14.00	70.00
Danbo-Rongjeng	3	-	-	-	18.00	27.00	18.00	63.00
Dambuk-Aga	11	NA.					NA.	
Mawryngthong	11						NA.	
Myllien								
			14.00	14.00	32.00	41.00	32.00	1,33.00

NUTRITION EDUCATION ETC.

- 2.15 Nutrition Education : Nongstoin Development Block indicated to have organised a short training course at Block-headquarters. One of the topics instructed was on nutrition. The duration of the course was 3 days. Within this period lessons on horticulture, animal husbandry and fishery were also reported to have been imparted. Participants

were selected from among the members of Women Organisations and Youth Clubs. The instructor of nutrition was the local Lady S.E.O. who, however, had not received training herself. It was expected that the participants in the training would in turn organise similar training demonstration classes to the local women. It was quite encouraging that Nongstoin-Sonapahar Development Block could organise such training class albeit mini in size for 5 successive years. For this purpose a total number of 245 participants were recruited during 1976-77 to 1980-81. This gave us an average number of nearly 50 trainees annually. Danbo-Rongjeng Development Block, however, had not organised any training programmes under ANP.

2.16 Supervision and Inspection : The two responding blocks (i.e. Nongstoin-Sonapahar and Danbo-Rongjeng) had arrangement for supervisory and inspecting works to look-into the execution as well as the post-execution condition of the production units. The supervisory officers included Extension Officers in-charge of food production schemes and the Social Education Organisers (S.E.O.s) including the Lady S.E.O. in-charge of the nutrition education. The frequency of inspection in the Nongstoin-Sonapahar Block was stated to be monthly while in Danbo-Rongjeng Block fortnightly.

2.17 Difficulties : The study tries to bring to light difficulties faced by the Project Officers in implementing the ANP as well as the factors impeding the achievement of results. In brief, the following were the more common obstacles towards the success of the Programme.

- (a) Inadequacy of co-operation from the public in general and lack of sincerity and responsibility from among the beneficiaries towards effective execution of the schemes entrusted to them;
- (b) Inadequacy of funds ;
- (c) late arrival of inputs (i.e. seeds, fertilizers, etc.) hampered the proper growth of units; and
- (d) inability of the Block Development Officers to conduct personal and timely inspection of units due to time constraints

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CHAPTER - III

VILLAGE LEVEL

3.1 Extent of coverage : The plan of action specified that the AN Programme should be introduced only in selected villages preferably those having health centres. In order to be effective during the operational period, its extension should be done in phased manner and in such a way so as not to dilute its impact.

3.2 Household sample size: According to the methodology of study, 10 villages were selected at random taking 2 villages under each of the five sample blocks. The sample blocks included, as stated earlier, the Myllien Development Block which already completed the post-operational period since 1978-79. It was to be mentioned that all the twenty selected households of the two sample villages under the Myllien Development Block expressed their ignorance and that they had totally forgotten the AN Programme. They, therefore, refused to furnish the information as desired from the household level. Even the headmen of these two villages were of no help at all for any information on the programme. Thus against 100 sample households as designed, only 80 households in the remain 4 blocks were found worthwhile with which to continue the study- the 20 ⁱⁿ Myllien Block villages having proved a total casualty.

3.3 Selected villages : Based on the methodology designed for this study, the villages selected for this purpose were listed at Table No. 3.1 which also showed their endemic demographic pattern. The Table did not, however, present the composition of the target groups as the age-limits of the same were not spelled out in the Master Plan of Operations of the programme. The latter simply mentioned the children,

as one of the intended beneficiaries without specifying their age-limits. Hence, the same could not be worked out.

Table No. 3.1 Composition of Household by age-group.

Dev. Block	Sample Village	No. of hhs. interviewed	Number by age-group					Average size.
			Adult	12-25	5-12	0-5	Total	
Wongstein	1. Mawkawah	10	22	21	13	9	70	7.0
Sonapahar	2. Riango	10	27	12	17	17	73	7.3
Dambo-	1. Darugiri	10	37	10	13	9	69	6.9
Rongjeng	2. Nongchran	10	31	13	15	7	66	6.6
Dambuk-Aga	1. Nilwagiri	10	27	5	8	5	45	4.5
	2. Eringiri	10	29	8	17	13	72	7.2
Mawryng-kneng.	1. Mawryngkneng	10	32	8	14	7	61	6.1
	2. Laitdiengsai	10	25	10	17	7	59	5.9
Myllion	1. 5th Mile Upp. Shillong.		-	-	N.A.	-	N.A.	-
	2. Mawtawar.		-	-	-	-	-	-
Total		30	230	87	119	79	515	-
Average		-	2.3	1.09	1.5	1.93	6.4	6.4

The total figures worked out in the Table 3.1 showed that in 3 households there were altogether 515 members and the average size of household being 6.4. The children under the age-groups between 0-12 years worked out to be 193 (33.75 P.C. of the total) against 317 (61.25 P.C. of the total) of the higher age-groups. The average size of a household in the villages varied from 7.3 to 4.1. Again, the average number of children of the age-group 12 years and below was 2.5 per household.

3.4 Land holding : The household schedule embodied sections concerning particulars on landholding of the respondents for cereal crops. These data were compiled and presented in the Table 3.2.

Table 3.2

Land holding for cereal crops during 1930-31

(Area in hectares)

Village	Nil	0.2023-0.2674	0.2675-0.4047	0.4048-1.0702	1.0703-1.6133	1.6139-2.4109	Not furnished
Mawkawah	2	1	2	3	2	-	-
Riangdo	4	-	3	3	-	-	-
Darugiri	-	-	1	3	5	-	1
Nongchran	-	-	3	2	1	4	-
Nilwagiri	4	-	1	3	-	1	1
Eringiri	-	-	1	3	6	-	-
Mawryngknong.	5	-	1	-	1	2	1
Laitliang-sai.	-	-	-	1	3	-	6
	15	1	12	13	13	7	2
							7

3.5 It may be observed from Table 3.2 that 15 households owned no land for cereal crop during 1930-31, 13 had an area of land between 0.4048-1.0702 hectares (1.0001-2.6446 acres) each, another 13 household between 1.0703 to 1.6133 hectares (2.6447-4.0002 acres) each, 12 household, an area of land between 0.2675 to 0.4047 hectares (0.6609-1.000 acres) each. In between, we have two extremes. That is, one household owned an area of land between 0.2023 and 0.2674 hectares (0.4999-0.6603 acres) while 2 households possessed land of 2.4109 hectares (5.9574 acres) and above each.

3.6 Occupation : Of the 30 respondents who were also the heads of the households at the same time, 61 or 76.25 percent were cultivators by occupation; 5 or 6.25 percent engaged themselves as agricultural labourers; another 5 or 6.25 percent fell in the group classified as "others", while 9 or 11.25 percent belonged to a category of Govt. service. The village break-up of occupation of the respondents is shown in Table No.3.3.

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Table No 3.3

Occupational classification of the heads of the households (1980-81)

Village	Cultiva- tor	Agri- labourer	Govt. service	*Others	*Included trading and Carpentry.
Mawkawah	7	2	-	1	
Riangdo	5	4	4	1	
Darugiri	6	-	4	-	
Hongchran	10	-	-	-	
Hilwagiri	6	3	-	1	
Bringiri	10	-	-	-	
Mawryngkneng	7	-	1	2	
Laitdiengsai	10	-	-	-	
Total :	61	5	9	5	

3.7 The Agencies : The Programme recognised the needs of involved and full co-operation of the leaders of the village community for its success. The Implementation of different components of the Programme was, therefore, entrusted to local organisations and schools. In the ten sample villages we had seven voluntary organisations including one organised in the form of co-operative enterprise, five schools and two village communities. The name of these agencies and their location is listed at Table 3.4.

Table 3.4

List of Agencies involved in the implementation of the ANP

Sl. No.	A g e n c i e s	L o c a t i o n	
		Village	Dev. Block
	A. Voluntary Organisation		
1. (1)	Mawkawah Women Welfare Organisation.	Mawkawah	Nongstoin-Sonapahar
2. (2)	Ka Ing Jingsuk	Riangdo	-do-
3. (3)	Darugiri Sanity	Darugiri	Danbo-Rongjong

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4. (4) Nongchram Women Voluntary organisation.	Nongchram	Dambo-Rongjeng
5. (5) Seng Bhalang Raid Mawryngkneng	Mawryngkneng	Mawryngkneng
6. (6) Seng Trei lang	Laitdiengsai	-do-
7. (7) Upper Shillong Service Co-operative Society	5th Mile Upper Shillong.	Mylliem

B. School

8. (1) Basic School	5th Mile Upper Shillong.	Mylliem
9. (2) Mawtawar L.P. School	Mawtawar	-do-
10. (3) Mawkawah M.E. School	Mawkawah	Nongstoin-Sonapahar
11. (4) Eringiri L.P. School	Eringiri	Dambook-Aga
12. (5) Nilwagiri L.P. School	Nilwagiri	-do-

C. Village Community

13. (1) Nongchram	Nongchram	Dambo-Rongjeng
14. (2) Eringiri	Eringiri	Dambook-Aga.

3. 8 Extent of participation in the Training programme :

From information given by the participating agencies, it was found that only one organisation had deputed its Secretary to a short Training Course in horticulture. This Secretary also happened to be the social Education Organiser of the block concerned. Otherwise, no member of any other organisation was ever sent to any training course either at Block head-quarters level or elsewhere.

FOOD PRODUCTION OF PLANT ORIGIN

3.9 Gardens and Area of Coverage

The production of foods of plant origin was taken up in 9 out of 10 Sample villages by 11 different agencies. (List of these agencies with other particulars like area of garden and plants, etc. is given in Appendix III). Plants were raised under two types of gardens viz.

(a) School/Medium-sized gardens totalling 9 in number and (b) Community gardens 2 in number. (No ANP Kitchen garden was traceable at the two sample villages under Nongstoin- Sonapahar Development Block where this

type of garden was reported to be in use.). While the area of the two community gardens was stated to be 1,241 hectares (3.0000 acres) each, that of school/medium-sized gardens varied between 0.4047 to 0.8093 hectares (1.0000 to 2.0000 acres). Two of four voluntary organisations cultivated an area of 0.8093 hectares (2.0000 acres) each and the other two voluntary organisations had an area of land of 0.4047 hectares (1.0000 acres) each. The five local schools (4 L.P. Schools and 1 M.E. School), stated to have set up an equal area of horticulture, that is, 0.4047 hectares each. The 9 school/medium-sized gardens (in the 9 sample villages) covered a total area of land of 4.4047 hectares (10.0005 acres) made up of 2.4280 hectares under voluntary organisations and 1.6190 hectares under local schools. The two community gardens together utilized an area of 2.4282 hectares (6.0005 acres). Thus, area of the 11 gardens of both categories utilized for horticulture in the 9 villages totalled 6.4752 hectares (16.00 acres) upto 1980-81.

3.10 Plants : Vegetables crop was found only in 3 out of the 11 horticulture units. The crops consisted of potato, beans, peas, carrots, laizag, etc. The area under vegetables comes to 1.0119 hectares (2.5005) acres. In the remaining 8 gardens, the area was utilized for fruit trees. Among the fruits, banana and pine-apple were most popular both in number of gardens and area coverage. Four of the 8 orchards were used exclusively for these two fruit crops. In another garden also these two fruits predominated with only a sprinkling of other fruits. There was only one garden which was utilized wholly for the production of temperate fruits like plum, apple, peach, apricot, etc. Taken together, area under fruits crops aggregated 5.4633 hectares (13.5003 acres) or 84.37 percent of the total area under the horticulture of the ANP Programme. The crops cultivated in each garden are given in Appendix III.

3.11 Inputs : Land was donated by a local village Durbar/Headman/Nokma to the agency concerned except in one case. One organisation used its own land for the ANP gardening. Seed was made available free of cost by the block concerned. Suckers of banana and pine-apple predominantly predominated seeds of other plants. As for banana the number suckers supplied to the different gardens ranged between 200 and 700 each while those of pine-apple between 500 to 3000 each. Besides,

fertilizer of 5 quintals each was received by two agencies. One agency could not state the quantity it received. Three agencies stated to have received wire fencing materials.

Financial assistance :

3.12 In addition to physical inputs, the Government also financially assisted the agencies engaged in food production. The amount of subsidy received upto 1980-81 by each agency is given in the Table No. 3.5.

Table No. 3.5.

Statement showing the amount of financial assistance received by agencies upto 1980-81.

<u>Name of agency</u>	<u>Year of Sanction</u>	<u>Amount</u>	<u>Percentage to total.</u>
1. Mawkawah Women Organisation.	1980-81	3000.00	12.05
2. Ka Ing Jingsuk	1979-1981	4,440.00	17.80
3. Songb Bhalang Ka Raid Mawrynglameng	1979-80	10,800.00	43.31
4. Mawkawah M.E. School.	1980-81	3,000.00	12.05
5. Eringiri L.P. School.	1979-80	300.00	1.20
6. Eringiri Community garden.	1979-80	3,400.00	13.63
7. Nongohram Community garden.	N.A.		

Note : Assistance received but the records were with the discharged secretary.

Total	24,940.00	100.00
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3.13 The table 3.5 showed that out of 11 agencies involved in horticulture activities, 7 had received financial assistance. In six of these agencies the total amount received upto 1980-81 aggregated Rs.24,940.00 (i.e. excluding assistance from an agency whose amount of its receipt was not available with respondent). Of this total, a sum of Rs.10,800/- or 43.31 percent went to only one voluntary organisation. In the majority of cases, the amount received by each ranged from Rs.3,000/- to Rs.4,400/-. In one case, however, only a token

amount of Rs.300/- was received. The "Mawkawh Women Welfare Organisation" and the "Ka Sang Bhalang Raid Mawryngknong", were the only two agencies which raised their gardens in terraces with the area also being more or less same. Naturally it was to be expected that the investment made in these two gardens would also be comparable. However, the above table had shown a glaring disparity in the subsidy received by these two comparable gardens. Indeed it sounds rather preposterous for the "Seng Bhalang Raid Mawryngknong" to be pampered with a subsidy amounting to Rs.10,800/- while the "Mawkawh Women Organisation" could receive only Rs.30000/-.

3.14 Products and mode of their disposal : Upto the date of inquiry only 6 of the 11 units had reported harvests. This included one unit which had wound up. The products were mainly from those gardens growing banana and pine-apple. To some extent vegetable harvest was also there. Planting was done during the period between 1979 and 1981 except in two gardens in which planting was done much earlier as these belonged to an ANP Block that had already completed the post-operational period. With regard to disposal, 50% of the products was distributed to the local feeding centres (under Special Nutrition Programme) or local schools where feeding centre was not available. The remaining 50% was used by the owners of the gardens according to their own requirement. The productivity position of each garden run by its respective agency is summarised in Appendix IV.

3.15 Present conditions of the gardens : The viability or otherwise of the production units may be judged from the prevailing conditions of the plants in the gardens and the state of their maintenance. Appendix V gives an idea of the condition of the gardens and plants. Such information included as related to the method of cultivation adopted, the growing condition of plants, the weed clearance, fencing facilities, etc. However, an overall position of the horticulture units, as observed during the field study is summarised as under:

3.16 A. Growing condition of plants

(a) Two school gardens had already been abandoned. The agencies had no time to look after the gardens. Schools children were too young for the job of giving serious attention to the crops.

(b) One school garden was not yet in physical existence although land had already been acquired and subsidy drawn.

(c) Plants in two medium-size gardens (at Mawkawah village of Nongstoin Development Block and Mawryngkneng village of Mawryngkneng Development Block) run by the two voluntary organisations were in decadent condition.

(d) Arecanut which is not a nutrition crop but a cash crop was found to have outnumbered predominantly banana and pine-apple in the Eringiri Community garden of Dambuk-Aga Block giving mixed plant action only the name.

(e) The tropical crops viz. banana and pine-apple in Nilwagiri, Darugiri both medium-size garden) and Eringiri School garden flourished quite well. So also, the vegetable crops planted in the medium-sized garden of "Ka Ing Jingsuk" were found in a satisfactory growing condition.

(f) The condition of crops in Nongchran community garden was beggar description.

3.17 B. Maintenance.

The maintenance of the horticulture units under the "Ka Ing Jingsuk" and the Eringiri Community on most counts was quite satisfactory. Barring these two, the upkeep in the other gardens leaves much to be desired. Weed in most cases, particularly the Nongchran Community garden, had outgrown the ANP crop.

3.18 Extent of Supervision/Inspections : One of the questions put to the implementing agencies related to supervisions by the official during and after the period of setting-up the ANP gardens. Out of 11 respondents, 5 replied in affirmative but the frequency of supervision differed. Some said only once and that was just to verify the physical existence of the garden. 3 respondents replied in negative ; 2 did not mention it; and 1 respondent could not say as the garden was yet to be established. This fact implied that the supervision/inspection arrangement stated at para 2.16 was not implemented, in letter and spirit.

3.19 C. Fencing Facilities :

Permanent fencing facility was available with Mawkawah Medium-sized garden and this was by means of barbed wire and with the Song Bhalang Medium-sized horticulture by means of earthen heap. The others were either without any fencing or with only temporarily improvised fencing facilities.

3.20 PRODUCTION OF FOODS OF ANIMAL ORIGIN

In addition to the production of foods of plant origin, the Programme envisaged production of foods of animal origin as well. In so far as the sample villages are concerned, the production of foods of animal origin included (a) animal husbandry and (b) fishery the implementation of which is described in the following paragraphs.

3.21 Animal Husbandry :

Animal husbandry undertaken in the selected villages under Applied Nutrition Programme comprised poultry and piggery units. The participants in this activity included both organisations and individual households, unlike horticultural units where no beneficiaries from among the individuals were identified.

3.22 Poultry : The agencies involved in poultry production consisted of one Co-operative society at 5th Mile Upper Shillong and 2 (two) individual beneficiaries. The co-operative society at 5th Mile Upper Shillong embarked upon this activity sometime in 1971 with 98 chicks supplied free of cost by the Myllien Development Block. Besides, a sum of Rs.887.00 was provided to the society for construction of a shed.

Whilst the project was going on, the average egg production was stated to be 40 eggs in number daily and that this product was shared between the society and ^{the} local feeding centre on 50-50 basis. Three years later i.e. in 1974, however the unit was wound up due to (a) feeding problem and (b) non-availability of hands to look after it.

3.23 The two individual beneficiaries belonged to two villages- one at 5th Mile Upper Shillong, Myllien Development Block and the other at Nongchran village of Danbo-Rongjeng Development Block. The beneficiary of 5th Mile Upper Shillong was reported to be insincere in maintaining the unit. Hence, in no time, he gave up the business and the unit remain closed ever since. The one of Nongchran village was, on the other hand, quite sincere in running and maintaining the unit. He had set up the unit in 1979 with 20 chicks he received from the block. He also undertook 5 days training on poultry. Earlier, he had also participated in some other training programmes specially organised for the farmers. Beside the chicks, he also received feed 3 times a year from the block with a quantity of 1 to 2 bags at a time. On the day of

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enquiry he had a total of 55 birds including 5 layers which on an average lay one egg each daily. He had only an ordinary shed. The birds appeared to be healthy on the day of visit. This was despite 17 death casualties in 1980 due to epidemic. He reported to have received timely treatment of the birds from the Veterinary Department during that epidemic. The eggs were disposed on a 50-50 basis sharing between himself (beneficiary) and the local feeding centre.

3.24 Piggery : One voluntary organisation, the Seng-Bhalang-Ka-Raid, Mawryngkneng, of Mawryngkneng Development Block, had already undertaken preparatory steps for starting a unit. With the financial assistance of Rs.3,300/- from Mawryngkneng Block, this organisation had constructed a pig shed having a concrete wall, C.I. sheet roof but the floor was only with planks which were yet to be nailed in position. The amusing feature of this shed, however, was that a padlock was not provided though the shed was said to have been completed since 1979-80. When this was pointed out to the Secretary, he simply told that he would look into it. The more baffling situation was that the shed was kept unutilised and till February, 1982, no pig was kept in the shed. The reason given was that the Veterinary Department refused to supply the pig-lets. This version sounds inconsistent as Table No.2.6 based on information supplied by the C.D. Department, would show that during 1979-80, six pig-lets were distributed among the beneficiaries by Mawryngkneng Development Block and the S.E.O. of the Block was the Secretary of the Voluntary Organisation. Any how when this point was discussed with Veterinary Department, the latter replied that its programme under Applied Nutrition Programme did not include provision for supplying of pig-lets to the beneficiaries. They had provision only in respect of chicks for poultry units. The location of the shed at Mawryngkneng was also quite far off from the village making inconvenient, if not impossible for catering daily feeds to the animal unless of course they could afford to provide a paid attendant for the purpose.

3.25 Four individual households were benefitted from this production activity. They were located in two out of ten villages. The break was three individuals in one village (Nilwagiri) and one in Ering Village. Both these villages were in Danbuk-Aga Development Block. In both these villages it was found that the beneficiaries were provided with financial assistance, out of which the beneficiaries themselves

had arranged for the procurement of the pig-lets. The animals of all the 4 individuals were of local variety. Two of the beneficiaries had to buy pig lets twice because those of first purchase died soon after. Thus the animals of two individuals were still young at the time of enquiry. The beneficiaries expressed anxiety about feeding which was a problem. Therefore they could not go for more than 2 animals. The other two beneficiaries were reported to have sold their animals already.

3.26 Pisciculture.

Two voluntary organisations and three individuals were identified as beneficiaries under fishery production of the programme. The two voluntary organisations were (1) "Ka Ing Jingsuk", Riango Village under Nongstoin Development Block and (2) The "Seng Bhalang Ka Raid Mawryngkneng, Mawryngkneng Village of Mawryngkneng Development Block. The extent of achievement of the beneficiaries in the activity is briefly narrated in the following paragraphs.

3.27 Voluntary Organisations : 'Ka Ing Jingsuk' completed its first fishery pond, said to be of 0.607 hectares in area, since 1979. It started stocking the pond with fingerlings numbering 4,200 on 12.6.79. Half the quantity of seed was purchased from Gauhati at a cost of Rs.300/- and the other half was supplied by the Fishery Department through the local development block. The first harvest was in 1980 with an estimated quantity of 120 Kgs. followed by another 200 Kgs. (approx.) in the subsequent year. Foods supplied to the fish included powdered grains of rice and wheat and Mustard Oil cake. For this activity, the organisation received a financial assistance amounting to Rs.3000/- in 1979. Further, the organisation stepped up its activity by constructing a second pond nearby. The construction work was in full swing on the day of visit. In both of these ponds, masonry and concrete type walls were raised. The fish of the first pond were all utilized in the mess of the boarders and of the member of the organisation.

3.28 The other organisation involved in pisciculture was Seng Bhalang Ka Raid Mawryngkneng. It began construction of the first pond during the year 1979-80 and could start stocking with fingerlings stated to be 10,000 in number in 30.4.81. The seed was procured through the local development block at a cost of Rs.1000/-. For this

activity, the organisation was able to receive from the block a financial assistance amounting to Rs.11,000/- which was almost 4 times what its Nongstoin Block counterpart could get. On the day of visit, there was no sign of fish movement in the pond. Side-channels on two side of the pond were constructed to prevent flooding during the rainy season. But the side walls separating the pond from the side-drains on both sides, were of stone **slabs** and boulders. The organisation proposed to put up a dam the same stream just below the present pond for raising a second pond. Till the day of visit, work for this proposed second dam was not started yet. No harvest had yet taken place till date of the visit. A comparative picture of the performance of these agencies in pisciculture is presented in Table No.3.6.

Table 3.6.

Pisciculture under ANP by the two voluntary organisations

Sl. No.	Name of the Organisation	Stated area of the pond (Hectares)	The Fingerlings stocked Date	Production (annual) Quantity (approx.)	Financial Assistance Year
1	2	3	4	5	6
1.	Ka Ing Ji ngsuk.	1st Pond = 0.60 2nd pond = 1.214	14.6.79 under construction	4,000 120 Kgs. 1980 200 "	1979 3000/- 1981
2.	Seng Bha-lang Ruid Mawryng-keng.	1.214 2nd pond N.A.	30.4.81 proposed not yet stated.	10,000 Nil	1979- 11000/- 1980

3.29 Individual beneficiaries.

From the study, 3 individual beneficiaries were identified. They belonged to three villages, namely, Nongchran of Danbo-Rongjeng Development Block, Nilwagiri and Eringiri villages of Dambuk-Aga Development Block. Among them, only that of Nongchran village appeared to be serious with the work. With the financial assistance of Rs.4,500/- the Nongchran beneficiary had already completed construction a pond measuring (40 x 16 x 6)m in 1981. Seepage from higher level source provided the water for the pond. He had jsut started stocking 1500 fish seeds in the pond. The fish were fed with husk and locally made 'murf', the frequency of feeding being thrice a week. The beneficiary of Nilwagiri

village proposed to widen his existing fish pond by (43 x 21 x 2)m. He had started doing a piece of work some time back with financial assistance of Rs.500/- only received from the concerned block. A lot of work still remained to be done. It is, therefore, quite clear that unless further financial assistance is available, the extra venture already started would not see the light of the day. As regards the beneficiary from Eringiri village, he was out of station on the day of enquiry. From the local headman, however, it was learnt that the individual had not cared for the project. He had done just a fraction of earth work. Unless, he again received ample financial assistance, there was no likelihood of his resuming the work.

3.30 Present position of the production units under Animal Husbandry.

As narrated in the preceding paragraphs, the position of the production units as found during on-the-spot inspection may be summarised as follows :

(a) Poultry Units: (1) The unit owned by a co-operative society had been abandoned 4 years after it was set up. (2) The unit owned by an individual beneficiary was progressing satisfactorily.

(b) Piggery - (1) a shed constructed with a financial assistance of Rs.3,300/- remained idle of the reasons being the misunderstanding between the organisation and the Veterinary Department. (2) Out of 4 individual beneficiaries, two were reported to have already sold off others animals were found healthy during the visit.

(c) Fishery - (1) The production of fish from one pond of the "Ka Ing Jingsuk" a voluntary organisation was in progress since 1980. The fish were seen moving about in the pond. The construction work for the second pond was going on; (2) A fish pond raised by another voluntary organisation was reportedly stocked but no fish could be seen during the visit in January, 1982; (3) One of the three individual beneficiaries identified, had already constructed a fish pond of more or less as would be wished for. Some fish seeds were reported to have been kept prior to our visit, but the same were not during spot enquiry. The remaining two individuals simply started the construction work perfunctorily, the completion of which is very doubtful.

/No proper maintenance of the existing pond was observed.

EDUCATIONAL ASPECTS

3.31. As referred to earlier, the scope of Nutrition Education under the Programme was limited merely to provide elementary education on nutrition to women folk of ANP villages. This embodied advice on the choice of foods and the types and quantities to be consumed, hygienic preparation and preservation of foods etc. This object was sought to be implemented through the help of members of women voluntary organisations, who should first be trained at Block headquarters or at State-level training centre. On completion of the training, the trained members of the organisation were expected to organise practical demonstrations among the house-wives, in their respective village on those lines on which they themselves were trained earlier. Six of the four-teen organisations stated to have deputed some of their members to a short training course on nutrition at their respective Block headquarters. Asked whether those trained members in turn had conducted practical demonstrations among the local women folks, two of the organisations replied in affirmative. These included the one which said to have organised demonstrations only among their fellow members. Four organisations had not organised demonstrations till date of enquiry. Beside these six organisations, there was another organisation, which even though its members did not receive training, used to impart nutrition education to mothers in the village once a month. though attendance was quite small. Thus in actual, there were only two organisations which implemented this particular component of the Programme to the intended village women folks.

3.32 In this connection a reference is made to what is called the Special Nutrition Programme (SNP) which was being launched simultaneously along with ANP by the same Department, i.e. Community Development through the blocks. One objective of the Special Nutrition Programme was to provide nutritional foods to the target groups-children, pregnant and nursing mothers. The Special Nutrition Programme was found operating in 7 out of 10 villages sample for ANP study. It was noted that all these 7 feeding centres were run by the local voluntary organisations, which, at the same time, engaged in ANP activities also. These local agencies received semi-processed foods from the blocks and then further prepared the same and distributed them to the

beneficiaries. In this way, the Special Nutrition Programme would have helped much in making the house wives understand better the implication of nutrition education both in the theory and in practice provided that they (house wives) were invited to watch themselves the working of the centre. Through these centres they would be able to learn the types of foods used, their preparation and the quantities served to an individual recipient. (N.B. Since our study did not concern with the Special Nutrition Programme no attempt was made to go in depth regarding its implementation, etc.).

3.33. Publicity : The local headmen were contacted and enquired if officials visited their village committee/Durbar for explaining them on nutrition. Six out of total ten respondents replied in the negative and four in affirmative. As to whether the local voluntary organisations ever held meetings with the women folks for demonstrating to the latter on food preparation, consumption etc. we had seven replies in negative and three in affirmative. Similar queries were put at the household level. Out of 80 households, 71 (88.75 percent) stated that neither officials nor non-officials ever visited their homes to speak to them about what was called the balanced diet. Again, 78 households (97.5 percent) reported to have never witnessed any kind of demonstrations by any agency. The two respondents who answered in affirmative were the members of a voluntary organisation.

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CHAPTER : IV

IMPACT OF THE APPLIED NUTRITION PROGRAMME

4.2 The Applied Nutrition Programme aimed, among other things, to create consciousness among the villagers about the importance of good diets. Whether people have been taken in by the A.N.P. drives could be verified through their adoption and application of the food production schemes and other nutritioned measures introduced in their respective village under the Programme. The succeeding paragraphs attempted, therefore, to highlight the extent of impact of the Programme, in the context of its different component upon the concerned villagers.

PRODUCTION OF FOODS OF PLANT ORIGIN

4.2 Kitchen gardens : Let us start with the ANP in its role to convince the people regarding the need of producing foods out of plants for own consumption in their kitchen gardens. In our study, we found that out of 80 selected households, 7 refused to give information regarding their possession or otherwise of any kitchen garden. 6 of these households belonged to a particular village viz. Laitdiengsai and one to Mawryngkneng Village. Both these villages were under Mawryngkneng Dev. Block. So we had only 73 (80-7) households who furnished the particulars pertaining to kitchen gardens. Of these 73 households, 22 or 30.14 percent reported to have no garden. The reasons, according to 16 respondents, being non-availability of land and due to time-constraints, according to the another 6 respondents. Ultimately, we had then 51 (73-22) households having land holding for the purpose of kitchen gardens. Of these 51 households, 15 nos. or 29.41 percent stated to own kitchen gardens covering an area of land between 0.2676 to 0.4047 hectares each, 14 households or 27.45 percent with an area of land between 0.220 to 0.2675 hectares each, 9 households or 17.65 percent between 0.0670 to 0.1338 hectares each while 4 nos or 7.84 percent reported to own units with an area between 1.2043 hectares and above each. The distribution of households according to area of these kitchen garden is shown in Table No. 4.1. (at page 37).

Table No. 4.1
Distribution of households according to
area of Kitchen garden (Non-ANP)

Sl. No.	Area Villages	No. Kitchen gardens	No. Paddy fields	No. Rice land	No. Other land	Total
1.	Mawkahwah	3	-	1	-	4
2.	Riangdo	4	-	2	-	6
3.	Darugiri	2	-	2	-	4
4.	Nongchran	1	-	2	-	3
5.	Nilwagiri	1	2	2	-	5
6.	Eringiri	2	-	-	1	3
7.	Mawryngmung	2	3	-	-	5
8.	Leitdiangsai	1	2	-	-	3
		16	6	9	3	34

4.3 Utilization of Kitchen Gardens (Non-ANP)

The study tried to understand the pattern of utilisation the Kitchen Gardens. It was preceded by listing first the name of plants cultivated in such gardens and thereafter by grouping these plants according to types of their products. Proceeding in this way, we classified these production units into six groups. For example, those units raising fruit trees only though of different kinds were grouped under one category. Like-wise, we had another category of gardens that produced only vegetables. The category-wise number of kitchen garden so arrived at was presented, in Table 4.2. The table indicated that out of the total 51 units, 21 or 41.18 percent were utilized for production of fruits and that these 21 units spread in 5 out of total 8 ANP villages. The village-wise number of units stood at 8,6,4,2 and 1 and was located respectively at village of Nongchran, Darugiri, Nilwagiri, Eringiri and Riango. Among the fruit plants, banana, mango, jack fruit and pine-apple were pre-dominant. Next to fruit plants, we had 9 units or 17.65 percent used for production of vegetables. Under this category, Riango village alone secured 6 units followed by Mawkawah village having 3 units. (Both these villages were under Nongstoin-Sonapahar Dev. Block). Thus adding together, these two categories (fruits and vegetables gardens) retained 30 units or 58.82 percent out of the total 51 units. The remaining 21 units (41.82 percent) were utilised for mixed cropping. For example, there were 6 units (11.76 percent) that produced in the same plot both fruit and vegetable crops, 8 nos. (15.69 percent) that produced fruit and cash crops and so on.

Table No. 4.2
Village-wise number of Kitchen gardens by
kind of products.

Selected ANP village.	Fruit trees	Vege- table crops	Fruit trees and vegetables	Fruit trees and cash crops	Vegetable and crop (mize)	Cash crop	Total
Maw kawah	-	6	-	-	-	-	6
Riango	1	3	2	-	-	-	6
Darugiri	6	-	2	-	-	-	8
Nongchran	8	-	1	-	-	-	9
Nilwagiri	4	-	-	3	-	2	9
Eringiri	2	-	-	5	-	1	8
Mawryngknong	-	-	-	-	4	-	4
Leitdiengsai	-	-	1	-	-	-	1
Total :-	21	9	6	8	4	3	51
Percentage to total	(41.18)	(17.65)	(11.76)	(15.69)	(7.84)	(5.88)	(100.00)
							...39/-..

EXTENT OF IMPACT OF ANP HORTICULTURE UNITS

4.4 Plants : The Table No.4.2 recorded that at Mawkawah village all the 6 kitchen gardens were utilized for production of vegetable crops only. The local ANP garden was, on the other hand, utilized entirely for the production of fruit plants. Also due to late planting, all the plants therein remained stunted and started withering. Obviously, therefore, the setting up of the kitchen gardens did not appear to have any relation whatsoever with the local ANP horticulture unit. The crops raised in the ANP unit at Riango village consisted chiefly of vegetable plants with negligibly few fruit trees. Table 4.2 registered 3 kitchen gardens of Riango village that produced vegetable crops and only 1 garden producing fruit plants, while another 2 units were used for mixed growing of fruit and vegetable crops. Apparently one might attribute it to be the influence of the local ANP garden since the majority of these units were utilized for vegetable production. During enquiry we have observed the striking features that cultivation was confined to a few vegetables like pumpkins, laizag, cabbage, etc., which also otherwise were the common items of production in the village. Coming to Darugiri village, the Table No.4.2. indicated that out of 8 kitchen gardens, 6 produced fruits crops, 2 fruit and vegetable plants mixed together. The local ANP unit, on the other hand, raised only fruit plants namely, banana and pine-apple.

4.5 In this connection, it was pertinent to note that among fruit plants in the Darugiri ANP village, banana, papaya and mango were found in plenty of even outside the programme. But pine-apple was not noticed. Hence, the inclusion of rare plant viz. pine-apple in one of the kitchen gardens can be ascribed as impact of the local ANP horticulture unit in which this very plant was one of the two plants planted thereon. The unit (ANP) was, however, yet to yield products as on the day of visit. Our general observation was that the practice of setting up Kitchen gardens by most of the households in the selected ANP villages had been in vogue much long before the programme. The plants produced in such gardens were according to climatic suitability of the place and also according to local taste and tradition.

4.6 Improvement and maintenance of kitchen gardens :

In course of field visit, we tried to ascertain if any special attention was paid to kitchen gardens by the villagers as a result of ANP horticulture schemes operated in the concerned village. In this, the enquiry confined to renovation, extension and general improvement of the gardens, by the respective owner. As for extension of garden area, the same was found as nil in all the units. Neither there was attempt to put additional plants (in case of orchards) in order to increase the number in the garden nor there was replanting to replace the degenerated plants. There was no clearance of weed or pruning of nearby trees which obstructed the fruit crops in the kitchen units. If there had been any special attention given to the plants, this could have been observed by upturned soil, weed and leaves dumps, in and around the gardens. In the case of vegetables, the cultivation was mostly by primitive method. There was no contours, no proper drainage and no raised beds. The signs of modern horticultural practice were in the kitchen gardens. There were no proper fencing of the gardens to prevent them from abuses by the public or raid by cattle. It was observed that all the units (orchards) remained as common place that used to be. In such a sight, one cannot but conclude that the Applied Nutrition Programme (barring one instance mentioned at 4.5) had not been able to create an impact on the ANP villagers pertaining to food production of plant origin.

Production of foods of animal origin :

- 4.7 Poultry : The study revealed that out of total 80 sample households, 13 (16.25 percent) did not rear fowls at all. Thus, there were 66 households (excluding one individual ANP poultry beneficiary) having poultry units as on the dates of field visits. The number of birds kept by the 66 households totalled to 709 with 207 as layers. As worked out from the collected data, the number of eggs laid by the 207 layers during a year was 3509. Of this number, 2434 eggs (29.2 per cent) were used for the owners' direct consumption. This showed that more than 70 percent was utilised for non-consumption purposes. The respective village consumption figure of eggs ranged from nil to 57.3 percent as depicted in Table No.4.3.

....41/-..

Note : The particulars of the ANP beneficiary were shown separately as they presented exceptionally higher figures than those of non-beneficiaries. Otherwise, the average figures of Nongchran village to which the beneficiary belonged would not be comparable with those of the other villages.

- 4.3 Impact of ANP poultry Unit : As stated earlier the ANP poultry unit at 5th Mile Upper Shillong had already ceased to exist since 1974. The only unit found still operative was the one run by an individual beneficiary at Nongchran Village, under Danbu-Rongjeng Development Block. This beneficiary raised his unit from 20 - 6 months old chicks received in 1980 to 55 birds in November, 1981. This included the 5 layers which produced eggs daily. The household consumption of eggs was stated to be as much as 912 per year. In this connection, our view was that if the said ANP Unit had had any influence on the local villagers, the latter's response towards poultry rearing would have been of higher degree than their counterpart in other villages. Such response would be observed, for example by their having more birds per household, etc. As recorded in Table 4.3, it was found that out of 10 sample households at Nongchran village 9 Nos. including the beneficiary, had poultry unit, whereas in two of the selected villages, all the households were found to possess poultry unit. Two other villages like Nongchran had 9 out of 10 households having poultry unit. The number of birds per household, showed a variation from 15.4 to 3.7. The overall average figure was 10.7 birds per household. As against this figure (10.7), Nongchran village had only 9.8 birds per household which was the same for Mawkawah village. The figures of other villages viz., Laitdiangsai, Darugiri, Eringiri and Riango stood at 15.4, 14.3, 13.8, 13.0 respectively per household. Thus, as regards the number of birds per household, both Nongchran and Mawkawah villages ranked in fifth place while Riango and Darugiri villages secured the first and the second place respectively. Concerning the

Concerning the proportion of eggs utilized for consumption, the overall village figure was 29.2 per cent of the total eggs produced. As against this rate, Nongchran village, by consuming 48.6 percent of eggs produced followed Darugiri village which was having the highest rate of 57.8 per cent. But if considered from the standpoint of the number of eggs consumed annually per household, Nongchran was in the third place. From the discussions in field, it was evident that the villagers at Nongchran did not fare better than the others in the sphere of poultry rearing and egg consumption as well. This showed then that the local ANP Poultry unit did not make an impact on the villagers in general. The impact seemed to confine to the beneficiary and his family alone who reported that since the time that this unit became productive, the frequency of their consumption of eggs had increased from four to twelve times in a month.

Table No.4.3

No. of birds maintained, eggs consumed etc. per household.					
No. of village	No. of hhs. with poultry unit.	Average No. of birds per hh.	Average no. of eggs produced per layer (annually)	Percentage of eggs consumed (annually)	Average numbers of eggs consumed per hh. (annually)
1. Mawkawah	9	9.8	39.2	23.9	17.
2. Riango	7	13.0	77.4	31.6	147
3. Darugiri	9	14.3	40.4	57.8	57
4. Nongchran	9	9.8	23.9	48.6	43
5.	(including beneficiary)				
5. Nilwagiri	10	5.5	28.2	3.1	5
6. Eringiri	10	13.8	30.9	23.4	34
7. Mawryngk-neng	6	3.7	34.9	14.1	9
8. Laitdiengsai	7	15.4	33.4	Nil	Nil
All village	-	10.7	41.1	29.2	33
Beneficiary		55	365	50	912 (1)50%

distributed to local feeding centre.
(2) The remaining portion consumed.

....43/-....

4.9 Piggery : We have seen earlier that the piggery unit proposed to be set up by a voluntary organisation at Mawryngkneng did not materialise at all. So the only impact that might be generated would be from those of individual beneficiaries located at Nilwagiri and Eringiri villages (both under Danbook-Aga Dev. Block). Data collected and presented at Table No.4.4 exhibited that out of 30 selected households, 30 (43.3 per cent) kept piggery units. The village-wise position showed that all the 10 households of Nongchran Village reared pigs. Next, there were three villages with five households each rearing the animals. The number of animals per household, varied approximately from 1 to 3 nos. Darugiri and Nongchran (including IRDP beneficiary) villages each recorded the highest number with 3 pigs per household followed by five other villages having 2 animals per household. Eringiri, where the individual beneficiary was inhabiting, showed the least in this respect. It was, therefore, observed that the ANP Piggery Units distributed to some individuals did not make impact on others of the same village.

Table No.4.4
Piggery units in the sample villages

Sample village	No. of hhs. with pig unit.	No. of hhs. without pig unit.	No. of pigs.	Average No. of pig per household	Remarks
Mawkawah	3	7	5	2	(1)including IRDP beneficiary.
Riangdo	3	7	5	2	
Darugiri	4	6	12	3	
Nongchran(1)	10	-	29	3	
Nilwagiri	4	6	10	2	
Eringiri	5	5	7	1	
Mawryngkneng	5	5	8	2	
Laitdiengsai	5	5	9	2	
Total:-	39	41	85	2.02	

4.10 As regards fishery production, none of the selected households possessed any fishery tank except the identified individual ANP beneficiaries themselves.

N U T R I T I O N

4.11 The ultimate aim of the programme was to bring about an improvement on the villagers' nutrition. This was envisaged to be effected in two ways. Firstly, their deficient diets could be supplemented with those foods produced by the people themselves on the pattern of production schemes advocated by the Programme. Secondly, by practising on the instructions imparted to them regarding selection and use of foods they could enrich the nutrition value of their diets. With regard to the first point, it was discussed earlier that there was practically no indication of the adoption of the ANP production schemes by the villagers. Now, as for the second part, we put the questions of such nature to the households as would enable gauge the impact of the Programme on their food consumption habit. For example, one question was whether the households considered that the existing food pattern as faulty. To this question, out of 80 respondents, 42 replied in affirmative, 37 in negative and 1 could not say either way. As to whether they thought it necessary to change the pattern for better diet, 44 said yes and 36 no. To another question if they changed the items and quantities of the foods since the Programme came into operation, 78 replied in the negative. The two households replying in affirmative included that of a Gransevak who had taken more green vegetables than before and that of ANP Poultry beneficiary. The latter reported increase of the frequency of egg consumption from once to 3 times a week.

4.12 Food consumption pattern :- The study collected data on food items and the quantities consumed by the selected households during the week preceding the date of enquiry. Based on these data, a village-wise calorie intake per consumer unit* per diem together with the proportion of cereals, starchy roots and sugar to the total was presented in the Table No.4.5. The calorie value for each food item per consumer per diem was shown in Appendix VI. The Table No.4.5 indicated a marked variation of the energy content of the food consumption from 2250 to 2797 calories per consumer unit per day during November, 1981. The percentage of cereals, starchy roots and sugar to total calorie intake fluctuated between 81 and 92. The all village average figure of total calorie intake per consumer unit per diem was 2544 and of which the proportion of cereals, starchy roots and sugar being 87 per cent.

Table No. 4.5
Calorie intake per consumer unit per diem etc. in selected villages.

(November, '81 - January, '82)

Sl. No.	ANP VILLAGE	Average household size.	No. of consumer unit per household.	Total calorie intake	% of cereals, starchy roots and sugar to total calories intake.
1.	Mawkawah	7.0	5.60	2259	89
2.	Riangdo	7.3	5.34	2511	82
3.	Darugiri	6.9	5.52	2797	83
4.	Nongehran	6.6	5.23	2519	91
5.	Nilwagiri	4.5	3.60	2639	81
6.	Eringiri	7.2	5.76	2564	84
7.	Mawringkneng	6.1	4.88	2466	89
8.	Laitdiangsai	5.9	4.72	2596	92
All villages		6.4	5.12	2544	87

Note #1. Section three-Summary of findings para 3.3.....

So far all practical purposes, 0.80 may be used for conversion from per capita to per consumer unit or vice versa....." of the Report No. 238, Vol.I 26th Round of the N.S.S.

- 4.13 Calorie intake : The extent of improvement or otherwise of nutritional status of the villagers could be derived by comparing the present figures with those of base-line level. But in this instance we could not do so because there had been no Bench Mark Survey to lay the base-line nutritional status prevailing in the Selected villages prior to the implementation of the programme. Anyhow, the findings of the study may be compared to the all State Level figures brought out in the National Sample Surveys "Twenty Sixth Round" (July 1971 - June 1972) in their Report No.238 volume I, page 133. The over-all State level calorie intake in Meghalaya per consumer per diem, during the July, 1971 - ~~June, 1972~~ period was 2577 as against the required level 2700. Our study showed three villages had crossed this level having calorie intake per consumer unit per day ranging between 2596 to 2797. during Nov., '81 - January, '82. Thus, in one of these three villages, the consumption per consumer unit per day had crossed the required level of 2700 calories by attaining the level of 2797 calories per unit per

day. The other three village though they still stood below the 1971-72 level, had each exceeded 2500 calories. The all-village level worked out at 2544 calories short - 33 calories from the State level of 1971-72 period.

4.14 Probing : The extent of villagers' acquaintance of the programme was ascertained by putting certain relevant questions to them. Regarding the awareness or otherwise of the Programme, almost all of them answered in affirmative. But as to how they became aware of the ANP, we had only 8 respondents including members of the local organisations who told that it was through officials. The rest i.e. 72 respondents or 90% of the respondents, know of it only through the local feeding centres (which were under SFP) and because of the local ANP gardens, they had however, no idea of its aim and objectives. None had explained to them (villagers) what they, on their part, should do. A similar query was asked to the headmen of the 10 selected ANP villages. Asked whether officials or non-officials ever came to talk to them collectively on the Applied Nutrition Programme, 6 (six) answered in negative. They also admitted ignorance as to what ANP stood for.

4.15 As para 4.10, we have stated that while 36 respondents did not think desirable to change for a better diet, the remaining 44 did express their desire to do so. We have also indicated in the same paragraph that only two did effect a change in their diet since the operation of ANP. As to the reason why the remaining 42 respondents had not changed their dietary habit despite their willingness to do so, the reply was that they had no knowledge as to the items of food and their quantities to prefer. In other words, no list or menu for balance diet was prescribed or recommended to them. Then again regarding the better or hygienic way of preparation and consumption of foods, 78 households confessed that none of their family members ever received any instruction or witnessed any demonstration of food preparation or presentation. Hence, they could not adopt any other new method than what they usually practised.

Data concerning cattle rearing indicated that of 47 households who reared cattle, 23 (or 59.6%) kept no milchcow. This obviously manifested that they were still to realise the major contribution of milk towards health and growth especially for children.

CHAPTER V: SUMMARY OF FINDINGS, RECOMMENDATIONS
AND CONCLUSION

5.1 FINDINGS :

In the implementation ~~the~~ food production components of the AN Programme, it was found that plant origin assumed a first place of preference taking into account the area of coverage, the number of beneficiaries and the fund allotment. This was in consonance with the line of action envisaged in the Master Plan of Operations. Again, out of total stated area of 9.4752 hectares under horticulture, that of orchards occupied an area of 5.4633 hectares or 83.37 percent. The food production of animal origin consisted of poultry, piggery and pisciculture.

5.2 Beneficiaries included voluntary organisations, schools and individuals. But none of the last category was identified under horticulture programme.

5.3 It was gratifying to note that in all but one case the land was donated by local village authorities showing thereby their contribution towards the programme. The other inputs viz. seeds (for all production activities) was supplied by the Dev. Blocks. The distribution of other inputs in the case of horticulture, like fertilizers and fencing wires was found discriminatory.

5.4 (a) The study found that there was no norm in the distribution of financial subsidies to the different agencies. One voluntary organisation received uncomparably high amount of financial assistance for every item of its production activities for what the rest were getting. For example, the amount received by it for horticulture production was nearly four times what others received while the quantum of their investment was more or less the same. Under pisciculture, the amount received by this organization was more than $3\frac{1}{2}$ times. In piggery it was the lone organisation receiving subsidy for the purpose among sister organisations. This disparity suggested the absence of common norms and rules of procedure laid down for determining the amount of subsidies.

5.4 (b) Expenditure incurred by the four Blocks under food production components of the Programme was found to be less than what it was earmarked under the financing Scheme of the Programme. The Block Dev. Officers also complained for the inadequacy of fund to be one of the hurdles for smooth implementation of the programme.

5.5 One of the short comings lay in the lack of attention given to the educational aspects of the Programme. Training Provisions at State and Block levels were not adequately implemented for instance, of all the staff under the two Dev. Blocks, which responded to our requirement, only a Block Dev. Officer of one Dev. Block indicated to have participated in the short training course (ANP) at State level. The Block Dev. Officer of another Dev. Block admitted that they never conducted training course on ANP at their Headquarters. At the grass-root level, we were told that no official or non-official ever visited the house-holds to explain the pros and cons of the ANP. Nor did the villagers ever witness demonstrations on food preparation, preservation etc. conducted at their village. As a result, the poor villagers were yet to realise the causes and consequences of malnutrition and also the possible measures which could be undertaken by them so as to mitigate the effects of this malaise especially on their young ones.

5.6 Out of 11 (eleven) horticulture units identified, 2 had wound up long ago; one was yet to start, eight units were in position of which five had already started yielding products. Weed clearance was good in respect of 2 units; fair in 3 units; not satisfactory in 2 units and absent in 1 unit. In the two units watering of plants was considered necessary. But this was not done. The young plants in these two units, therefore were found withered and dying. In one of the community ANP gardens, the cash crop (arecanut trees) was found to have outnumbered the fruit trees.

5.7 Of the three ANP poultry units, two had already been wound up a few years after establishment. The one unit owned by an individual was found functioning well.

- 5.8 A pigshed constructed with a subsidy of Rs. 3,300 had remained un-utilised for more than a year for non-supply of piglets by the Animal Husbandry and Veterinary Department as alleged by the Secretary of the Organisation and who himself was a S.E.O. of the local Dev. Block. The contention of the A.H. & Vety. Deptt. on the contrary was that their piggery programme did not cover the ANP but only poultry. In another Dev. Block this particular programme was, however, executed by advancing financial assistance to the selected beneficiaries who in turn arranged themselves for the procurement of the animals.
- 5.9 Three fishery ponds (ANP) were already in position; two owned by voluntary organisations and one by an individual beneficiary. The pond of one of the voluntary organisations already started yielding catch and that of an individual beneficiary was found very good promising even better results.
- 5.10 As could be observed from the position of their production units, some beneficiaries proved to be sincere and serious in executing their share of the ANP while some were not serious at all.
- 5.11 (a) The practice of raising kitchen gardens was found already inherent among the villagers. But there was no sign of change of attitude towards the improvement and maintenance of the same as envisage in the ANP. This speaks of people's continued ignorance of the role of kitchen gardens under ANP towards better nutrition.
- 5.11 (b) The impact of the Programme may, however, be attributed to one instance. That was, the planting pine-apple by one selected household in its kitchen garden when the plant was rare in the village. This may be ascribed to impact of the local ANP orchard in which pine-apple was one of the fruit trees grown.
- 5.12 The existing ANP poultry unit at Nongohram Village appeared to have no influence at all on the local villagers. This was soon from the fact that the number of birds per household in this village was far below the number per household in other ANP villages. Also, from the standpoint of egg consumption, the village was behind other villages.

5.13

Coming to a more direct point i.e. the change in diet as visualised by the Programme, we had only 2 (two) (or 2.5 per-cent) of a total 80 households stating to have modified the items and quantities of the foods in their diet as a result of their learning from ANP. The two households included the ANP poultry beneficiary and the household of a Gran-sevak. To gauge further about of people's continued ignorance about better diet, out of 47 households owning cattle, 28 (or 59.6 %) did not keep milch cows which could have provided good foods in the form of milk especially for the children.

5.14

The study found that there had been no benchmark survey of the selected ANP villages for establishing the base level of their nutritional status. The absence of such survey made it impossible to indicate more firmly the improvement or otherwise of the nutritional status of the ANP villagers with the implementation of the programme. Comparing, however, to the 1971-72 State level figure of 2577 calories per diem per consumer unit, it was found that the calorie intake in the three villages, during Octr. 81-Jan. 82 (was ranging between 2596 to 2797 calories) while in the other 5 villages the calorie intake was still below this (1971-72) level. Further in one of the 3 villages above, calorie intake had even crossed the required level of 2700 calories per unit per day.

5.15

Other observations

(a) The supervision during the execution of the different components of the Programme was found quite in-adequate. There was no follow-up inspection of the units after their execution. The concerned officials seemed to have assumed that their responsibility was over once the implementation was done. Absence of follow up was directly responsible for the poor condition and maintenance of many units and irregular use of the funds.

(b) The local varieties of fruit trees used for ANP gardens in East and West Garo Hills were found much more viable than the exotic varieties used in ANP gardens in East and West Khasi Hills. Also the fruit plants like banana and pine-apple planted in East and West Garo Hills bear fruits in much shorter period of time.

... 51/-

(c) There was no proper maintenance of records with regard to the implementation of the different components of the programme. This seemed to be the reason for the non-response of the 3 Dev. Blocks and undue delay from the other two Blocks which furnished the required data only with much difficulty. The records position in the Directorate of Community Department was equally unsatisfactory for study purpose.

RECOMMENDATIONS

5.16

Horticulture

(a) The prevailing condition observed of the horticulture units warranted taking up immediate measures to bring the orchards into proper growing condition before they degenerate further to a total loss. This would required immediate inspection of all the units with a view to knowing the actual condition of each of the units and then to decide on the remedial measures required by each of them. For certain units it may be necessary to reissue seeds and other physical inputs to bring them back to normal conditions.

(b) Special attention to community garden at Eringiri may have to be given by requiring that the cash crop (arecanut) should not predominate and outgrow the fruit trees (banana and pine-apple) if the garden is to continue as ANP garden.

(c) Local fruit trees should be preferred to exotic varieties except where the latter had proved to have distinct advantages. Further, among the local varieties, these having the capacity of yielding products in less period of time should get preference over others to be in line with time priority of the ANP.

(d) School ANP gardens may be preferably allotted to M.E. School Level in which the pupils generally have become more mature for the gardening works.

(e) Fertilizers, preferably at the first planting, may be given to the beneficiaries without discrimination. Fencing materials become necessary to avoid the damage from stray cattle. Proper maintenance should be stressed.

Foods of animal origin

- 5.17 (a) Poultry production being less costly and less demanding, may be preferred to other animal production schemes. Piggery, as per the underlying objective of the Programme, did not seem to be immediately and directly relevant to the nutrition of the beneficiary but more of an enterprise. It should, therefore, be deleted from the list of ANP production schemes. Poultry, on the other hand, is not only universal in acceptance but highly pertinent because at least part of the eggs produced was consumed in the beneficiary household and in the concerned village. In this case also, we advocate for individual beneficiaries who will undertake more responsibility than a group or organisation.
- 5.17 (b) The controversy between the "Song-Bhalang ka Road Mawryngkneng" and the Animal Husbandry Veterinary Department, on the issue of supplying the piglets to the already constructed shed should be looked into and corrective steps be taken so that the ANP does not become handicapped by multiplicity of such affairs.
- (c) Before recommending subsidy towards construction of any fish pond, the feasibility and viability of the same as well as the sincerity of the applicants be enquired into thoroughly..
- 5.18 Regular inspections : From field observations there is no doubt that the best way to ensure proper maintenance and growth of the production units was regular inspection of all the ANP units by the C.D. staff, preferably once a quarter. This would also ensure the proper utilisation of products of the units as envisaged in the Plan of action. The findings of the inspection and the remedial measures suggested should invariably be communicated to the Directorate C.D. Department for information and further action.
- 5.19 Educational aspects : It is suggested that the educational aspects of the Programme be implemented earnestly and vigorously. The Programme may be publicised through village durbar meetings and house to house campaigns and through other media to enlighten the villagers on the objectives and the strategies for implementation of the Programme.

5.20 Training particularly of the trainees and demonstrators, should be organised at the block headquarters so that these operatives can spearhead correctly the requirements of the ANP to the people in the village.

5.21 There should be a norm for distribution of subsidy for different activities to forestall abuses of funds and minimise glaring disparities.

5.22 Conclusion : The study revealed, certain shortcomings in the implementation of the different components of Applied Nutrition Programme in the State. The concrete result derived from the Programme so far was confined to a few beneficiaries who had executed the respective food production activity with seriousness and sincerity. This provides a silver lining to the programme in the State. The vast majority of the beneficiaries, individuals or groups are yet to take ANP seriously. Many production units were yet to yield products. Villagers were also yet to understand the significance of the food production component implemented under the Programme.

There was still a lot to be done with regard to the educational aspects of the Programme. In this connection, it is desirable to refer to the other on-going allied Child Welfare Programme particularly the SNPs (Supplementary Nutrition Programme by the Social Welfare Department and the Special Nutrition Programme by the Community Development Department) in the State. The uniqueness of the ANP, however, lies in that it seeks for self-production of certain food items by the consumers themselves while under the other two allied programmes, the provision for food items were supplied from the Government. The ANP thus seeks to combat malnutrition on a long-term approach whereas the two Programmes did it through immediate and temporary basis. Accordingly, its co-ordination with these allied Programmes appeared to be inevitable. Hence, the remedial measures recommended at para 5.16 onwards.

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APPENDIX I

LIST OF ANP BLOCKS ACCORDING TO YEAR AND STAGE OF
OPERATION IN MEGHALAYA

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<u>Stage</u>	<u>Name of Development Block</u>	<u>Starting year of ANP</u>
A. Operational period.	1. Songsak Dev. Block	1976-77
	2. Nongstein-Sonapahar Dev. Block	1976-77
	3. Mawsynram Dev. Block	
	4. Chokpot Dev. Block	1977-78
	5. Mairang Dev. Block	
	6. Mawryngkneng Dev. Block	
	7. Khliehriat Dev. Block	
	8. Danbo-Rongjeng Dev. Block	1978-79
	9. Sikzak Dev. Block	
B. Post Operational period.	1. Betasing Dev. Block	1971-72
	2. Dadenggiri Dev. Block.	
	3. Shella-Bholaganj Dev. Block	1972-73
	4. Laskein Dev. Block	
	5. Dymbursla Dev. Block	1973-74
	6. Selsella Dev. Block	1974-75
	7. Danbu-Aga Dev. Block	1975-76
C. Completed the post operational period.	1. Bhoi Area Dev. Block	1965-66
	2. Rongran Dev. Block	1966-67
	3. Jowai Dev. Block	1967-68
	4. Resubelpara Dev. Block	
	5. Myllien Dev. Block	1968-69

Source : Directorate of Community Development Department.

APPENDIX II

FINANCING PATTERN OF APPLIED NUTRITION PROGRAMME

4. During the 5 years' Operational' period an ANP Block received per year the following financial assistance by source and by programme.

<u>Programme</u>	<u>Government of India.</u> Rs.	<u>*State Govt.</u> Rs.	<u>Total</u> Rs.	<u>*Of which contribu- tion by Deptt.</u> Rs.
1. Agriculture (Horticulture)	16,000	36,000	52,000	Agriculture-23,000
2. Animal Husbandry & Vety. (Poultry & duck rearing)	10,000	18,000	28,000	Animal & Vety. 14,000
3. Fishery (Pisci- culture).	4,000	18,000	22,000	Fishery 14,000
4. Associated Organ- isation (10 Mahila Mandals & 5 Yuvak Mandals)	4,000	4,000	8,000	
Total	34,000	**76,000	1,10,000	51,000

**Of which Community Development's share of annual Rs. 25,000 contribution.

3. In addition to the amounts indicated above, an ANP Block under Operational Period received the following Assistance from UNICEF during the 5 years period.

	<u>Rs.</u>	
1. Plant food production	10,500	94,500 in kind
2. Animal " "	2,000	18,000 " "
3. Support to Mahila Mandal & Yuvak Mandal	2,500	22,500 in cash and kind
4. Training	2,000	18,000 in cash
5. Transport	3,000	27,000 in kind
Total	20,000	1,80,000

C. Assistance for Post Operational period for 5 years.

Central Govt.	Rs. 20,000	for 1 year =	Rs. 20,000
UNICEF	Rs. 18,000	for 2 years =	Rs. 36,000
State Govt.	Rs. 12,000	for 5 years =	Rs. 60,000

Total :- Rs. 1,16,000

Thus, financial involvement to be incurred for each ANP Block, from different sources may be summarised as under.

<u>Sources</u>	<u>Operational period for 1 year</u>	<u>5 years</u>	<u>Post operational period for 5 years</u>
Central & State Govt.	1,10,000	5,50,000	80,000
UNICEF		1,80,000	36,000
Total :-	(A) 7,30,000	(B) 1,16,000	

(A) - (B) = Rs. 8,46,000

Source : Directorate of Community Department.

APPENDIX III

STATEMENT SHOWING AREA OF ANP GARDEN UNDERTAKEN BY
EACH AGENCY AND THE PLANTS THEREIN.

Sl. No.	Name of agencies	year engaged in ANP	Area of the garden at start (Hectre)	at present (Hectre)	Plants
1.	Mawkawah Women Volun- organisation	1980-81	0.4047	0.4047	Fruits, peas, pean, Plum gua etc.
2.	Ka Ing Jingsuk	1979-80	0.6070	0.8093	Vegetables: Mulea, beans moton, carrots Laisag.
3.	Darugiri Mohila	1980-81	0.4047	0.4047	Fruits; Banana & Pine-apples
4.	Seng Bhalang Ka Raid Mawryng- kneng	1979-80	0.6070	0.8093	Fruits: Peas, Chestnut, Ma- naspoti, Peach.
A =			2.0234	2.4280	
5.	Basic School		0.0002	no longer	Vegetables: Beans, peas.
6.	Mawtawar L.P. School		0.4047	-do-	Vegetable: Potato
7.	Mawkawah M.E. School	1980-81	0.4047	0.4047	Yet to be planted.
8.	Eringiri L.P. School	1979-80	0.4047	0.4047	Fruits: Pine apple, Oranges, Banana, gua, lemon.
9.	Nilwagiri L.P. School-	1979-80	0.4047	0.4047	Fruits; Banana & Pine-apple.
B. =			1.6190	1.2141	
10.	Nongchram ram Commu- nity garden.	no record	1.2141	1.2141	Fruits: Banana Pine-apple.
11.	Eringiri Community	1979-80	1.2141	1.2141	Mainly areca- nut Subsidia- ry: Banana Pine-apple.
C. =			2.4282	2.4282	
Total A + B + C = 6.4752 hectares (including sl. Nos. 5 & 6)					
Source : Voluntary Organisations/Schools/Village community.					

APPENDIX IV

Statement showing the productivity position of ANP garden.

Name of agency & its location.	Year of Planting since.	Average annual quantity of products.	Disposal
Mawkawah Women Welfare Organisation, Mawkawah Nongstoin Dev. Block.	1981	No products yet	
"Ka Ing Jingsuk" Riangdok Nongstoin Dev. Block.	1979-80	Vegetables produc- ed seasonally. Sufficient more or less to feed the boarders/ School Children.	Mainly used by boarders and partly to feeding centre run by the Or- ganisation itself.
Darugiri Mahila, Darugiri, Dambu-Rongjeng.	1980-81	No products so far.	
Seng Bhalang, Raid Mawryngkneng, Mawryngkneng.	1979-80 1980-81	No products.	
Nongchram Community Dambu-Rongjeng.	N.A.	Banana-20 bunches.	Feeding centre.
Eringiri Community, Dambuk-Aga, Baghmara.	1979-80	Banana-100 bun- ches, pine-apples - 150 Nos.	Local School Children.
Basic School 5th Mile Upper, Shillong, Mylliem Dev. Block.	N.A.	No products.	
Mawtawar L.P. School, Mylliem Dev. Block.	N.A.	Potato 2 quintals when it was still in existence.	Local School Children.
Mawkawah M.E. School Nongstoin Dev. Block.	Not yet	in position	
Eringiri L.P. School, Dambuk-Aga Dev. Block	1979-80	Banana 15 bunches	Local School.
Nilwagiri L.P. School	1979-80	Banana 15 bunches Pine-apple, 200 Nos.	Local Feed- ing centre.

Source :- Voluntary Organisation/Schools.

APPENDIX V
GENERAL CONDITIONS OF EACH AMP GARDEN AND THE
PLANTS THEREIN

Sl. Name of Voluntary
No. Organisation

Method of cultivation; condition of
Plants etc.

1. Mawkawah Women Organisation

- (a) Made of terraces
- (b) Plants withered due to late planting which was done in the month of August.
- (c) There was no weeding during the year it seemed.
- (d) Fencing was done by means of barbed-wire.

2. Ka Ing Jingsuk

- (a) There was a proper ploughing of land.
- (b) Plants (vegetables) flourished.
- (c) Maintenance - clearing of weeds - watering of plants was good. The Organisation, being also, an Institution with boarding facilities, the major part of maintenance work was carried out by the boarders.
- (d) Temporary fencing. But the garden as quite safe from being loitered by domesticated animals and birds because, the Institution itself located far enough from the village.

3. Darugiri Mahila.

- (a) The garden was raised simply by clearing of shrubs.
- (b) Plants (Pine-apple and banana) found growing well and were expected to bear fruit soon.
- (c) Clearing of weeds was fairly satisfactory.
- (d) Temporary fencing by means of bamboos.

4. "Seng Bhalang
Ka Raid Mawryngkneng"

- (a) made of terraces.
- (b) Plants only temporary fruits either withered or sluggish. Under the present condition it was doubtful that the plants could attain their normal growth. Reasons: As could be observed, the soil was hard, and full of pebbles. This condition continued to prevail since no watering of plants was carried out.

(c) The height of weeds showed the absence of clearing the same during the year.

(d) Fencing permanent by means of earthen mound all around.

5. Mongchram Community.

(a) The Cultivation work consisted only in clearing of shrubs.

(b) Plants (i.e. banana and pine-apple) was ~~inert~~ and retarding because no proper maintenance.

Clearing of weeds for some portion was done perfunctorily. The local headman reported the indifference of the villagers to the horticulture due to alleged mismanagement of affairs and miss-appropriation of fund by the out-going Secretary. In an attempt to urge them for their co-operation to make the Unit successful, they expressed their inability to do so unless they received financial assistance from the Government.

6. Eringiri Community

(a) The garden was raised through clearing of bush.

(b) Banana and pine-apple still young. The most striking feature of the garden was that these two food crops were too few in comparison with the cash crop arecanut. The garden, according to our observation, was meant primarily for the arecanut tree and that the two crops (banana and pine-apple) were just secondary.

(c) Plants thrived well.

((d) Maintenance- good and nice. Weeds and dry leaves were heaped upon the roots of the plants.

(c) No fencing.

7. Basic School 5th Mile Upper Shillong.

(a) Of vegetables- Abandoned one year after being started. Reasons: The teacher had no time to look after the Unit and the pupils were too young to be of any assistance.

8. Mawtawar L.P. School

The same condition like that of Sl. 7 above.

9. Mawkawah M.E. School

Not yet started the gardening work.

10. Eringiri L.P. School

(a) Shrub cleared for setting up the Unit.

(b) Plants mainly pine-apple and banana grew well.

Some of them had yielded fruits. The rest were yet to produce.

(c) Maintenance - fair.

(d) No fencing.

11. Nilwagiri L.P. School

(a) as at 10 above.

(b) Plants :- banana and pine-apple growing nicely. Already in fruits yielding stage.

(c) Maintenance - fair

(d) No fencing.

Sources : Voluntary Organisations/Schools/Village Community.

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CALORIE INTAKE FOR CONSUMER UNIT PER DIEM (November 1981 - January 1982)

Name of Village	Average No. of house-hold size.	No. of consu-mer	Cereals	Pulses	Green Vege.	Potato	Root	Oil	Sugar	Egg	Milk	Meat	Fish	Fruit	Total Calo-rie intake
1. Mawkawah	7.0	5.60	1769	17	64	45	9	63	189	-	36	35	18	14	2259
2. Riango	7.3	5.84	1825	63	71	50	18	118	176	10	86	53	35	6	2511
3. Darugiri	6.9	5.52	2112	39	118	36	-	40	303	8	63	47	18	13	2797
4. Nongehran	6.6	5.28	2148	9	70	8	3	21	137	12	57	25	13	16	2519
5. Nilwagiri	4.5	3.60	1875	177	70	69	21	107	165	81	15	63	41	15	2639
6. Eringiri	7.2	5.76	1956	132	22	43	21	190	126	9	14	28	13	10	2564
7. Mawryn-gkneng.	6.1	4.88	1946	33	15	35	1	121	206	4	36	50	5	14	2466
8. Leitdieng-sal.	5.9	4.72	2161	47	14	61	-	88	156	-	-	69	-	-	2596

N.B. - The Calorie content per unit quantity of food items was taken from the Chart showing the same, at page of the Report No. 238, Volume-I-Twenty Sixth Round : July 1971-June 1972 - Calorie and Protein of Food Items per diem per Consumer Unit in Rural Areas.