

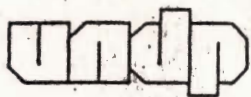
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UNDP/UNCHS/ Project VIE/86/020

Appropriate Technology Transfer in Construction



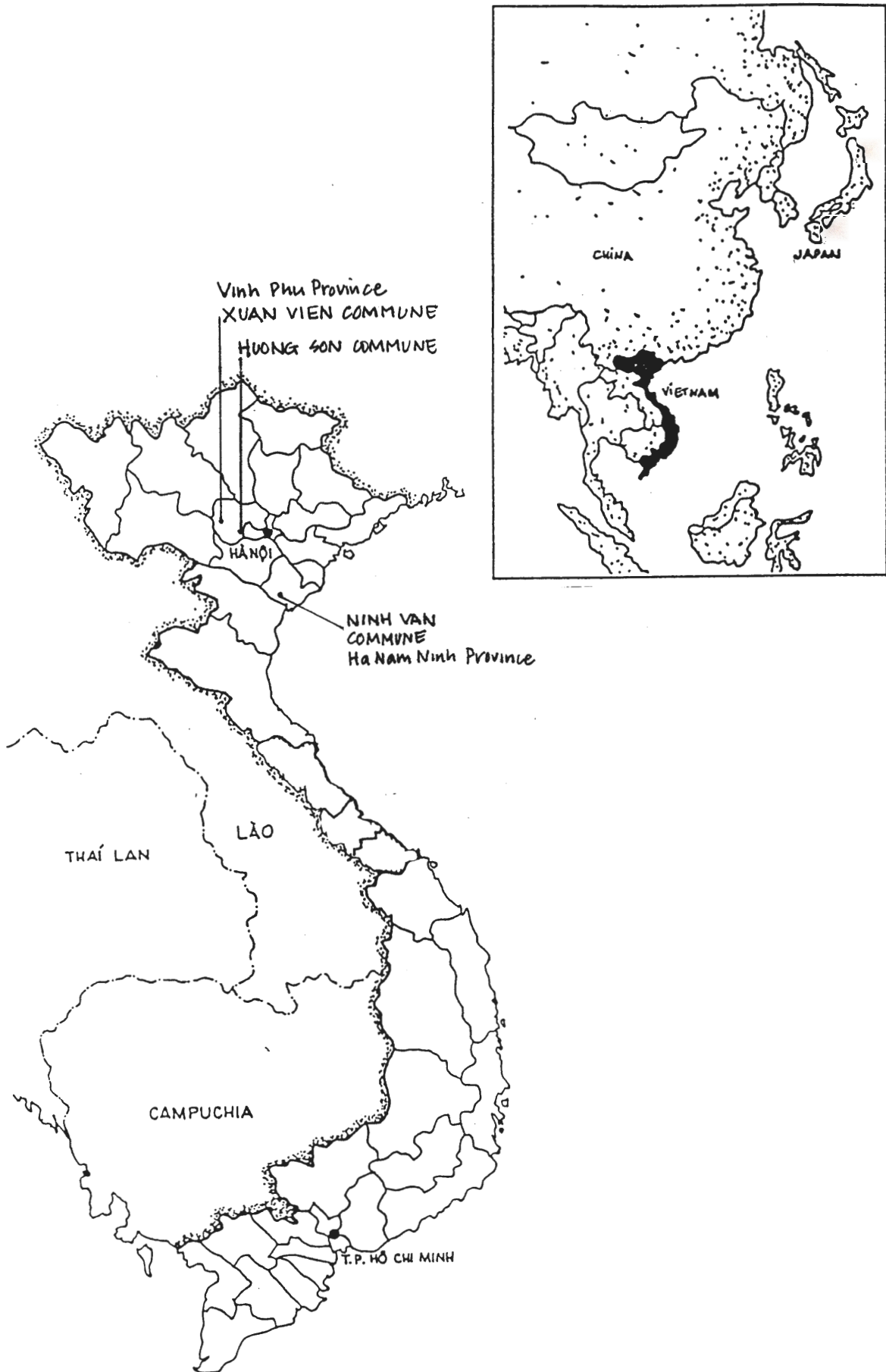
**A turning point: Progress in Ninh Van Commune
Starting in Vinh Phu communes**



3rd Interim Report

**October 1991
DW/GRET**

Vietnam: location of communes referred to in the report



1. Summary

This is the 3rd Interim Report, as stipulated in the contract.

One year has passed since the start of the sub-contract activities, and, for the overall VIE/86/020 Project, this time marks an important stage in the development of the programme, and even more significantly, in the development of CERPAD's capacity to undertake the tasks it is expected to address in assisting Vietnam's rural development in a rapidly changing international economic context.

Actions are now on-going in the Ninh Van Commune in Ha Nam Ninh Province, whilst in Vinh Phu Province the planning and commune selection process (with the assistance of Social Planning Consultant Erik Whist) has been completed, and two communes now identified (B2 & B3): Thang Son Commune in Than Son District, and Xuan Vien Commune in Yen Lap District. Here, those activities which take place under the guidance of the sub-contractors are now starting in these two communes, and this therefore represents the first time that an entire sequence of actions, from commune selection through to the choice of action to be undertaken, will take place in one province. The methodology handled until now in two parts - by the planning consultant for the first part, and by the sub-contract for the latter - can be seen as a complete process. This is discussed in more detail in Chapter 2.

To reflect the overall situation of the project, as well as the more practical aspects of work in Ha Nam Ninh Province and Vinh Phu Province, the report is divided into four main sections:

- Chapter 2. Assessment of the overall project: a joint report from John Norton, on behalf of the DW/GRET sub-contract, and Erik Whist, consultant in Social Planning Techniques.
- Chapter 3. A review of progress on actions in Ninh Van Commune.
- Chapter 4. Objectives and programming of actions being initiated in Vinh Phu communes.
- Chapter 5. Development of training materials and technical dossiers.

Chapter 2. Project assessment - October 1991

THE VIE/86/020 PROJECT IN RURAL SETTLEMENTS PLANNING, AND APPROPRIATE TECHNOLOGY TRANSFER IN CONSTRUCTION.

**Text of a joint report from John Norton, on behalf of the DW/GRET
Sub-contractors, and Erik Whist, consultant in Social Planning Techniques**

Hanoi, 7 October 1991.

1. Introduction

This report reflects our shared assessment of the present situation of the project, its achievements and future perspectives. These views were discussed extensively with Dr. Than, Director of CERPAD, and CERPAD staff and Mr. Bob Hardy, Chief Technical Adviser, from 30 September through 4 October, a period during which we were both carrying out our work with CERPAD. The framework for these discussions has been the objectives of the project.

The project is at an important phase, where, for the first time, the methods of working that have been developed in CERPAD with the consultant and with the sub-contractors are coming together as one single operation, in the province of Vinh Phu. Since the start of the project, CERPAD has made great development, but particularly in view of the changing situation and the new demands which are outlined below, much remains still to be done in order that CERPAD can fulfil its mandate.

2. The project objectives

The **Development Objective** of the project is to promote balanced growth in social and economic assistance throughout Vietnam by assisting in the further development of human settlements in rural areas of the country, so as to enable the rural population to enjoy the same benefits as those who live in the towns.

The **immediate objectives** of the project are:

1. An improved capacity within the National Centre for Rural Planning and Development of the Ministry of Construction for Human Settlements Planning in rural areas, and for the scintillating of programming and funding of rural infrastructure.

2. A functioning advisory service on technological matters made directly available to commune communities for implementation of development plans and projects.
3. The co-ordination of infrastructure development activities for the up-grading of living conditions in the 'three' pilot communes as models for replication of the planning process and the appropriate technology advisory service.
4. Increased knowledge transfer to staff of the MOC on current planning and technological practices related to human settlements development in rural areas.

3. Historical background.

At the time of formulation, the project envisaged an operation using, initially, two institutions, the Institute for Urban and Rural Planning (IURP) of the MOC, and the Transfer Centre for Appropriate Technology in Construction (CATTIC). Starting with work in the Group A. communes initiated in the preparation phase of the VIE/86/020 project, and thus dating from the time when the project envisaged working on a commune by commune basis, a working practice was established: IURP prepared a detailed commune level master plan, whilst taking into major consideration the technologies which CATTIC dealt with; CATTIC then implemented these technologies in the commune, as a direct action involving quite intensive site supervision. To a great extent, choice of technology was determined by CATTIC capacities, and not to a sufficient extent by commune needs and resources.

In late 1990, at the start of the VIE/96/020 Project proper, the creation of the National Centre for Rural Planning and Development (CERPAD) in 1990, (envisaged in the project document as an offshoot of IURP), created in practice an institutional relationship with CATTIC somewhat different from that foreseen in the project document, which had previously been seen as a collaborative effort between the two organizations. In effect, whilst some staff have been seconded to CERPAD from CATTIC, CATTIC has not, since the start of the main project phase, been actively involved in the VIE/96/020 project (nor with the VIE/86/020 sub-contract for whom they were the designated partners), and CERPAD has thus worked on its own, and without a clear institutional structure to support it. The practice of working with detailed master plans for each commune, followed by action implementation with the direct involvement of the CERPAD technical staff, continued.

This approach was only feasible as long as:

- a) CERPAD was only dealing with a very small number of communes without a view to replicate an approach on a larger scale;
- b) the choices of technology would be in accordance with the limited range of expert skills available within the Centre.

4. New operational perspective.

At the start of VIE/86/020 sub-contract in October 1990 DW & GRET carried out an evaluation of the work carried out in the Group A. Communes. They concluded that insufficient attention had been paid to resource analysis, comparative costing analysis, and feasibility analysis of different technical options based on appropriate performance criteria. Thus whilst some decision about technologies to be applied in Group A may have been the right ones, they were scarcely supported by a thorough evaluation of the context and options. A practical skill could be demonstrated, but the method by which it had been selected could not.

Similarly, in his first mission in September 1990, the consultant in social planning techniques also carried out an evaluation of CERPAD's work in the Group A Communes. It was pointed to the fact that CERPAD has a national mandate, which may not be attained through the direct promotional involvement of CERPAD in the development of individual communes.

Two steps have been taken to address these situations.

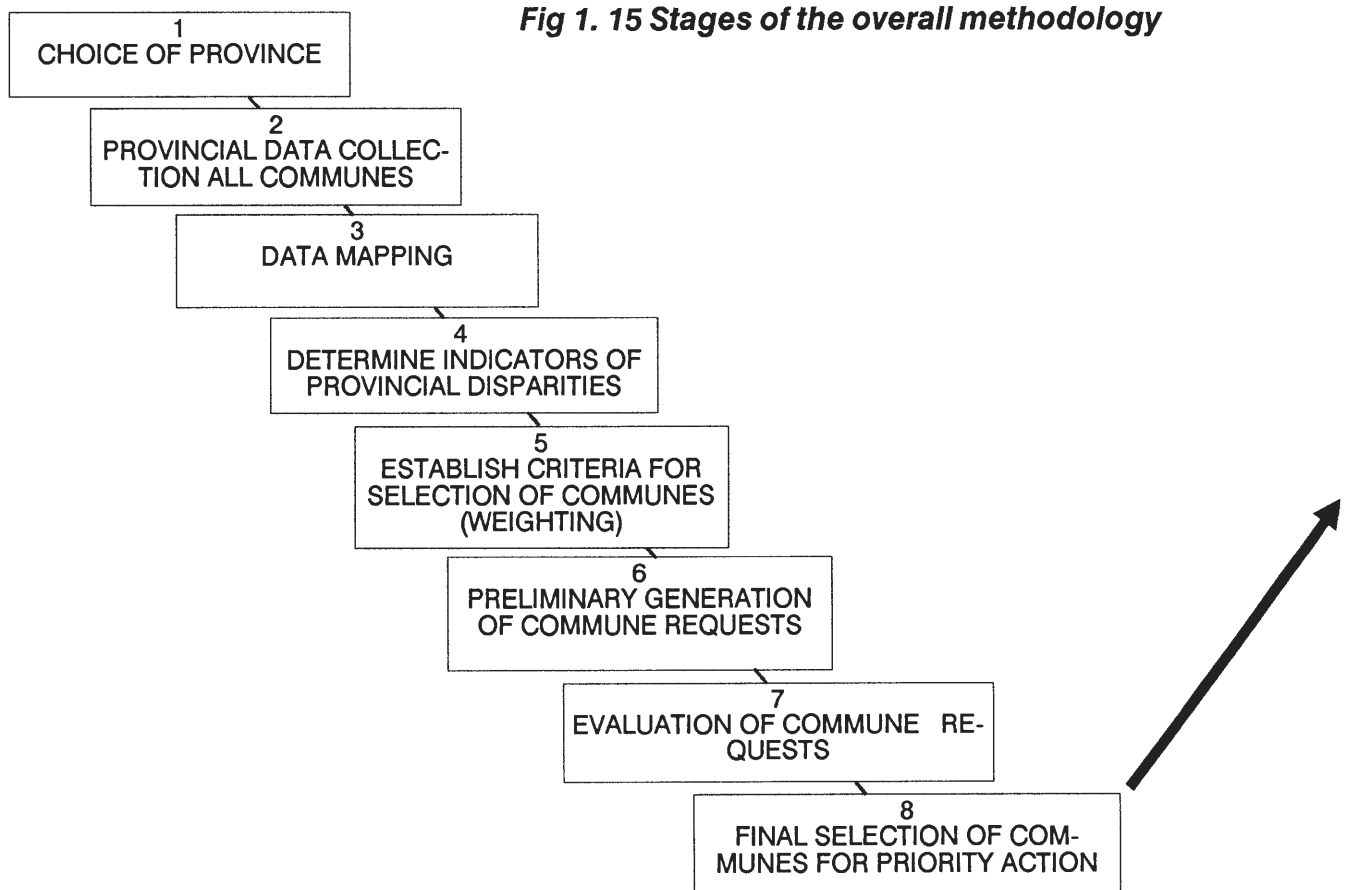
Firstly, in October 1990 the TPR modified the project approach, moving away from a 'commune by commune' programme to a planning approach involving a provincial level infrastructure planning exercise. One consequence has been that the 'detailed master plan' approach is no longer viable. CERPAD has had to develop a faster and more easily replicated planning approach, which will enable the Centre, as hoped for expansion of operations takes place in coming years, to provide planning assistance in an increasing number of provinces leading to the identification of those communes which require priority assistance.

Secondly, the sub-contractors, DW & GRET, initiated the development in CERPAD of a working method for the identification, at commune level, of needs, resources and potential solutions, and the development of methods for the subsequent transfer of selected and proven solutions to solve identified problems.

5. Project work from October 1990 to October 1991.

In the period from October 1990 to October 1991 CERPAD has developed the Rural Infrastructure Planning and Implementation Methodology in accordance with the new

Fig 1. 15 Stages of the overall methodology



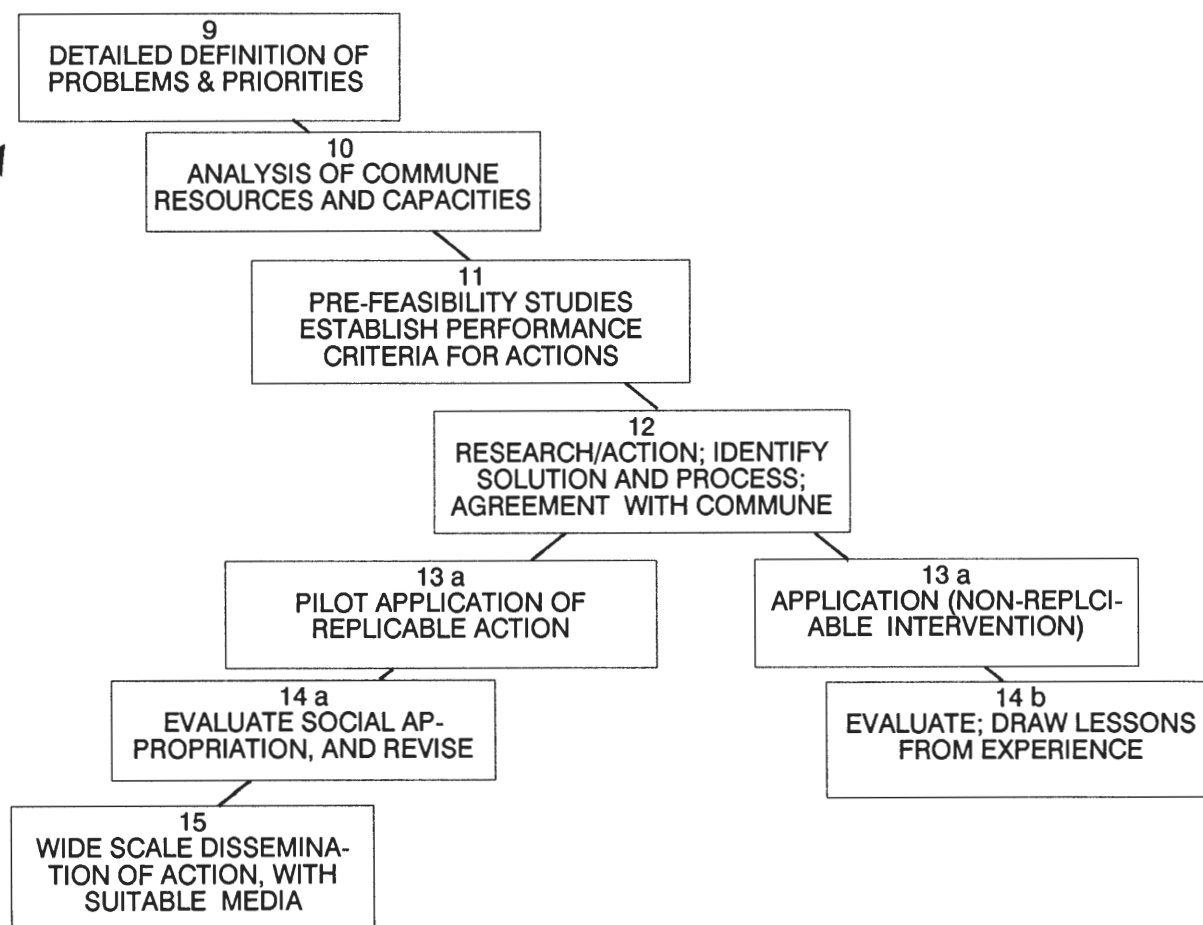
orientations explained in section 3 above. It has done so in particular through two sets of activities:

- a) Selection Process of Communes for Rural Infrastructure Planning and Implementation in Vinh Phu Province. Through this work CERPAD has developed a methodology combining database, mapping and analysis of provincial disparities with generation and analysis of commune requests. The methodology follows the steps recommended in the mission reports from the consultant in social planning techniques and is described extensively in the paper presented at the Vinh Phu Workshop in September 1991.
- b) Action in Ninh Van commune, Ha Nam Ninh Province, where CERPAD staff have started working through a process, not only of selecting and applying techniques and actions, but also one that has helped them eliminate in-appropriate actions. There have been steps towards a greater diversity in the actions that have been identified. The process has followed the stages outlined in the sub-contractor's Inception Report, November 1990.

Through these two pilot activities, CERPAD has acquired experience and technical know how for the application of a complete methodology. This methodology now clearly consists of two phases as shown in figure 1.

Recommendation 1:

It is very important that the Rural Infrastructure Planning and Implementation Methodology is applied as whole and in the sequence shown in figure 1. If this is not adhered to, the project will not have achieved its immediate objectives.



6. An expanding programme

Since the end of 1990 CERPAD has seen an expansion in its activities. Work on the three original group A Communes (excluding Do Son) has continued. To implement new operational approaches with the start of the main VIE/86/020 Project and the associated sub-contract, work was proposed in three more communes (Group B), two in Vinh Phu and one in Ha Nam Ninh province. There are now strong indications that work on additional communes in Vinh Phu will be requested in 1992, and that major actions will be launched in Quang Nam Da Nang province. This situation represents a major challenge to CERPAD and will require CERPAD to review its entire work modality. It reinforces the fact that the 'direct involvement' approach is not sustainable on a large scale operation: CERPAD has to delegate.

Recommendation 2:

Training and development of provincial and district counterparts now becomes a major objective for the Centre. These local counterparts, working in the communes, will in turn be supported by CERPAD technical assistance and advice.

7. Future perspectives for CERPAD

As a consequence of the shifts in the mode of operation of CERPAD and the increasing work load, CERPAD will have to undergo some major changes both regarding the definition of its tasks as well as the institutional structure and the organization of its staff.

7.1. Overall methodology

CERPAD is now gaining increasing experience in the use of a methodology which includes a complete cycle from planning through to implementation. As it is repeated, this process will become easier and faster. Familiarity with the process must also lead to a confident ability to explain each step accurately to their counterparts in the rural areas.

7.2. Selection of communes

With the increased availability of good statistical data in Vietnam, the selection process should become more streamlined. CERPAD will not have to undertake extensive data collection activities since they will be able to make full use of the recent census data.

7.3. Focus on correct action identification in communes

Although CERPAD is gaining experience in following a structured analysis and feasibility process, there is nevertheless still an apparent bias towards applying familiar technical options. In order for CERPAD to assume its role as a national Centre providing an Advisory Service, it must be able to take the broadest view possible when identifying possible actions through a step by step process. Action should be seen to include management, organization and finance aspects as much as it might include technology. In addition, at the identification stage, the Centre should not feel itself limited or constrained by its own in-house technical expertise.

Recommendation 3:

The emphasis should be placed on developing CERPAD's comprehensive capability to identify the right action to solve a problem, and to reject those that are not appropriate to a given situation.

7.4. From direct implementation to training and institution building

CERPAD is now shifting from being a practical implementation organization to become an institution dedicated to developing provincial and district skills, and through them, commune level skills aimed at developing rural infrastructure, productive capacity and living conditions. Training becomes a key activity, whether through on-the-job training or formal training through workshops in Hanoi or in the provinces. The technical dossiers, which are developing out of the practical experience of work in the communes, now serve as the basis of technical guidance for action on the ground and as the substance of training material. As such these dossiers must become an example to be followed in terms of standards for technical precision and clarity of communication.

Recommendation 4:

CERPAD should make a major effort to strengthen its training capacity and to develop a high quality of training support material. A major effort should be made to develop technical dossiers etc. in such a way that they may be used as training material.

7.5. From limited technical knowledge to a broad technical advisory service

Through its work CERPAD has acquired considerable technical knowledge in the fields they have been working. In the future CERPAD should therefore be able to give technical advice on related subjects. However, it must also follow that CERPAD will not necessarily have in-house technical expertise to resolve all identified problems. CERPAD will instead need to have the ability and means to draw on the skills and resources of other institutions available in Vietnam and failing that, abroad. As such, a key 'transfer' role for CERPAD, and for those that it trains, is to correctly identify an action, and then find the right resource person able to provide the required assistance.

Recommendation 5:

Technology identification, whether by District counterparts or by CERPAD, must not be limited by the practical technical expertise available within CERPAD. CERPAD has to increase its general knowledge of what skills and techniques are available or are developing in Vietnam.

7.6. Balancing the professional strength of CERPAD.

Whilst in the past CERPAD has had a strong planning and technology bias, it has been weak in other sectors.

CERPAD needs to develop its capacity to provide guidance about financial management, whether at commune level, or higher up in managing the funding of rural development operations.

CERPAD also needs to develop its capability in the field of communication and media development, both to transmit information to the target population, and to clearly inform national and provincial decision makers and donors about the role it plays in rural development.

CERPAD is already developing a capacity to provide resource analysis services, and, at present, particularly for water quality analysis and for soil analysis. These represent services which can be provided to districts on demand, as well as providing support to the resource analysis phase of work in a commune.

Recommendation 6:

CERPAD needs to complement its present staff profile with additional skills.

7.7. Changes in organizational structure of CERPAD

As indicated above in section 3, CERPAD's structure has involved two somewhat distinct elements, the planners and the technicians. In line with a new method of operation, the institutional structure of CERPAD now needs to have at its core a team of planners working in close cooperation with an 'action identification team', both well skilled in training. This core element needs to be supported by the technical, financial and communication expertise indicated above. Within the new framework an effort needs to be made to ensure that each person understand his/her role and its relationship to the overall structure.

Recommendation 7:

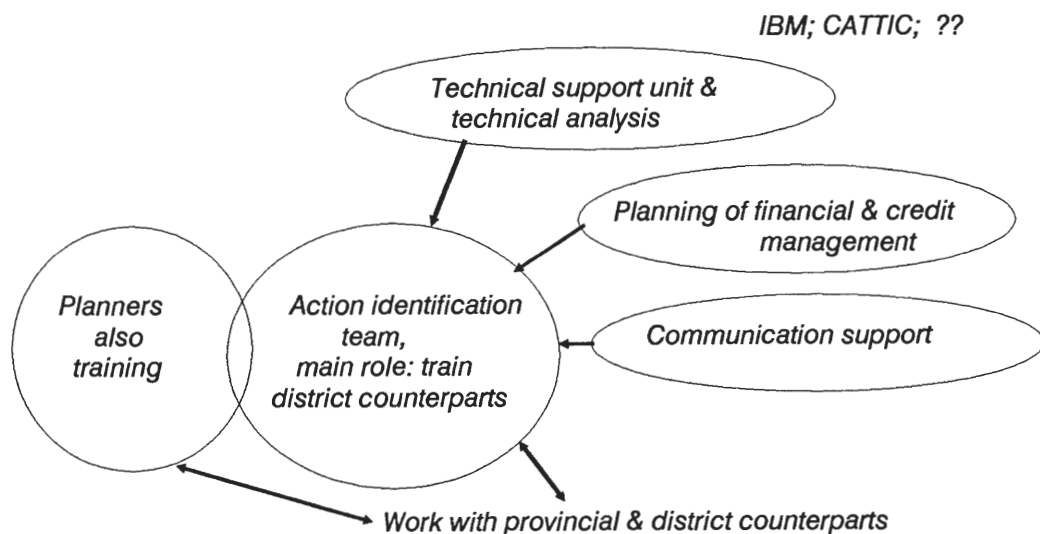
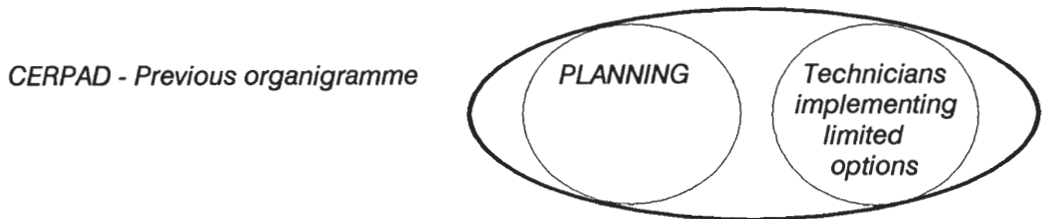
CERPAD needs to clearly establish and 'action identification team', and to designate the role of each staff member within the new structure.

7.8. Requirements for strengthening of CERPAD staff

To achieve the above targets considerable time will have to be dedicated to developing and applying training skills. The process is slow, involving, as it must, 'on the job' training. This will inevitably be the most demanding challenge for both technical assistance and CERPAD staff.

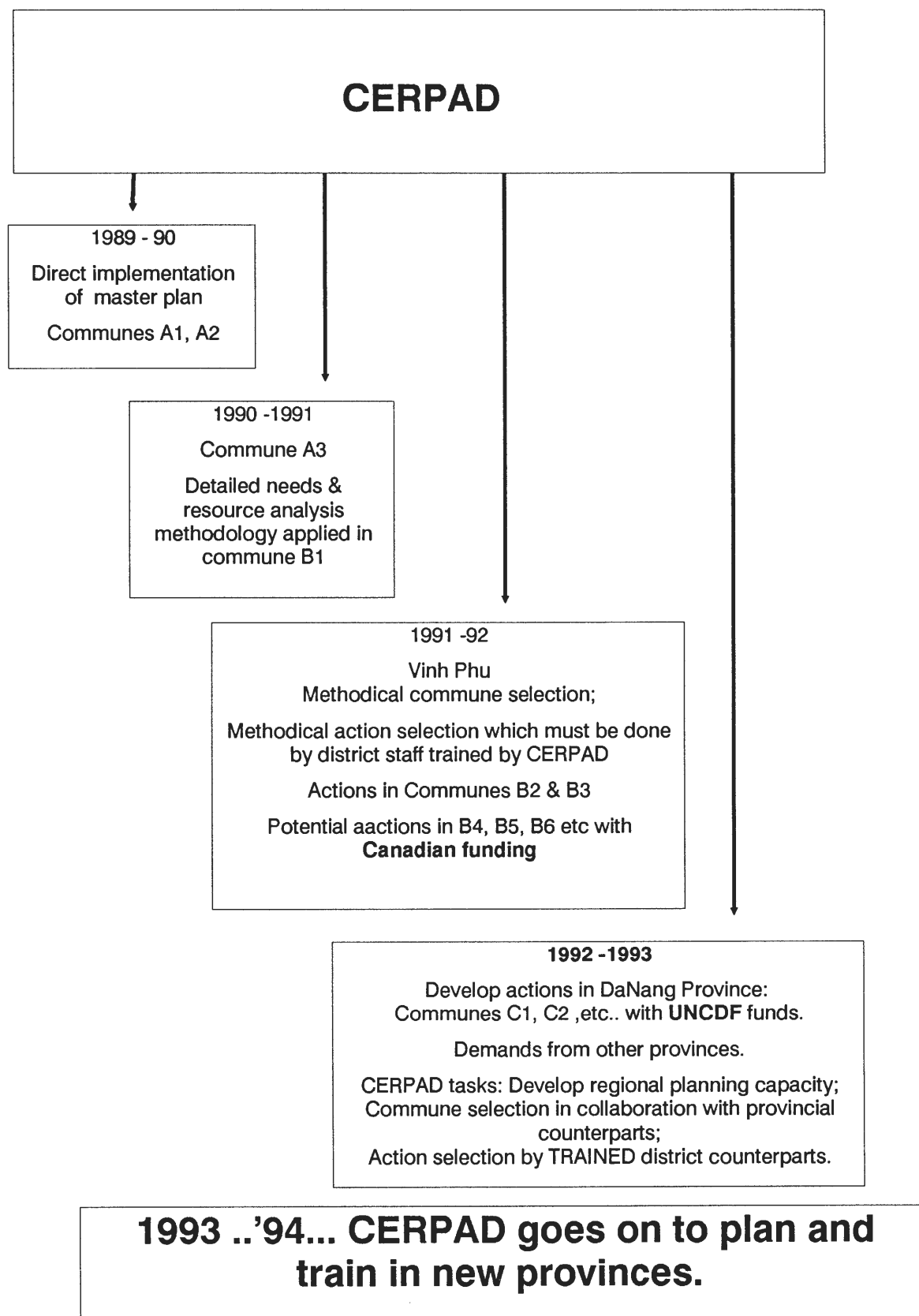
Recommendation 8:

CERPAD staff must recognize that the Centre can only fulfil its mandate by delegating tasks through the people it trains and that this requires patience.



CERPAD - revised organigramme to meet new tasks

*CERPAD - development of actions: 1989 to 1992
from direct implementation to training counterparts*



3. Actions in Ninh Van

1. Overview

1.1. Commentary

From April to October 91, some major progress has been achieved in the field work (pilot actions implementation) and within CERPAD (New Technical Dossiers). This represents a developed capacity for CERPAD to implement actions, to develop a good relationship with local authorities, and to carry out some relevant and reliable studies. The standard of work has been enhanced in the case of some actions, and this is gratifying.

In Ninh Van Commune, the local authorities (through a Rural Development Board) and the population (by participation mainly through labour) have been strongly involved in the process of implementation. There remains nevertheless an insufficient level of counterpart training by CERPAD, to ensure that at District and Commune level pilot actions can be, where relevant, replicated. One concludes that in Ninh Van, CERPAD has still been, to too great an extent, the implementor.

Nor is the implementation of an action an end in itself; it is important that each action can be evaluated, subsequently improved or rejected, and, where viable, disseminated to a wider target population. To this end, during the April missions by J. Norton and G. Chantry, a "monitoring check list" was prepared in order to facilitate monitoring and the later evaluation of pilot actions - following the process described in Inception Report and the against the criteria for each Technical Dossier. This has only been followed in the case of some actions, and where it has not, and information is thus not available on the implementation process, organization, selection of families, monitoring of costs etc., the evaluation/diffusion of the results becomes very difficult.

For Ninh Van Commune, some pilot actions will continue in the next months. Closer attention has to be paid to monitoring and training.

1.2. Funding of actions in Ninh Van.

Just before the end of the June sub-contract mission by G. Chantry (24/6/91), a Memorandum of Understanding was signed between Ninh Van Commune and Project VIE/86/020 NPD and CTA for construction of prototypes in 1991, without discussion with Project Sub-Contract staff. Preliminary discussion with the sub-contract would have been expected, given that part of the sub-contract activity has been to encourage a raised awareness of the need to adjust targets in the light of realistically available budgets and to develop mechanisms which can ensure capital and operational costs for each action. It is to be hoped that better coordination will take place in the future.

The overall project allocations now include (all costs in Dongs) :

Van Le - Tam Diep road	100,000,000
Dong Quam-Com Thong road improvement	50,000,000
Van Le bridge	35,000,000
Road maintenance (50 % total area)	13,000,000
Commune market	21,300,000
Improved stoves (500)	15,000,000
Family filter water tank (100)	12,000,000
Latrines (50)	16,000,000
TOTAL	262,300,000
TOTAL in US \$	33,200

(1 US \$ = 7 900 Dongs as of June 1991, value at the time of donation, since increased.)

Contribution from Commune	75 %
Contribution from Project VIE/86/020	25 %

2. Status of Ninh Van pilot actions and next activities

11th October 1991

1. Building materials

1.1. Stone dust for concrete:

Preliminary research has been undertaken on the use of stone dust for concrete. Results are positive so far.

Action now needs to be developed for practical testing of 10m² of concrete slab, to be tested in Hanoi, and subsequently in Ninh Van market (paving of open area).

A dossier for this action has been prepared, with cost estimate for test floor area. Work will be undertaken in the next two months.

1.2 Cement tiles tests

Several tests (strength and waterproofing) have been carried out for local Cement tiles and IBM tiles, with different compositions of mortar (Cement Bimson, local cement, sand, stone dust). The results indicate several satisfactory compositions. One major problem for the use of stone dust is the necessity to mesh it (grain under 2.5), which contributes to high cost (with small grinder only 50% of grains are under 2.5)

Tiles using stone dust have now been made by Nr Tuc from Ninh Van; comparison with ordinary sand cement tiles show similar performance and productivity, although tile making with stone dust was slower to start with.

Conclusion: Produce traditional tiles (cement/sand/stone dust) for the Commune market, with stone dust from a large grinder (70% usable material)

A dossier for application in Ninh Van has been prepared.

1.3 Stone column tests

Two different columns (with stone-rollers and bricks) were erected as an entrance gate of old temple. Results are not conclusive, as stone rollers require a major work for carving. This is not a viable proposition. Action terminated.

1.4 Stone masonry

In order to compare two solutions, and as suggested by the People's Committee, a bathroom (2x2m) has been built in the People's Committee office, with two kinds of walls:

Building experiments - stone columns; semi dressed stone walls in Ninh Van



- undressed stone with both internal and external plaster
- semi-dressed stone with internal plaster and cement joints for external wall.

This experimentation has shown interesting results (reported in CERPAD technical report), on costs and local skill.

The decision is now to apply the technology for the new market walls : semi-dressed stone with thin cement joints. CERPAD to arrange the participation of a skilled stone mason from Nam Dinh to train Ninh Van masons in this method, as well as for stone arch building, as part of the market implementation.

2. Water supply and sanitation

2.1. Family water filter

A propaganda campaign has been organized with authorities, mass organizations, health centre - loudspeakers announcements/meetings... (No precise information available).

30 voluntary families were registered in the PEOPLE'S COMMITTEE office (mainly rich/middle families) and received instructions for construction and maintenance of the filter (leaflet of 2 pages, and advices from the Construction service of Commune).

Different models (for dimensions, materials used - stones, bricks) based on the same design have been built, some of them with defects. The cost varies from 100 000 to 300 000 Dongs (no precise data available).

(A) Site inspection: the filter seen during the mission in Ninh Van is large, and would seem to be more realistically suited to used by a group of families, and is not really a 'family' filter. Action should be renamed! Other filters have been made.

Effort should still be made to achieve a small filter suited to the individual family, and one that is cheap.

(B) Installation of a hand pump for wells has been rejected, and in practice the depth of the water table indicates that this is not a problem.

The bamboo filter has not apparently proved popular with families in Ninh Van.

(C) Action now needs to be taken to develop media for raising awareness on the need to filter water, and the way to do so. The suggestion remains that of using loudspeakers and health workers: more effort should be made to find other methods, including puppet shows, posters etc.

Prepare and carry out a programme of tests to evaluate the filters (technical result, cost, social acceptance)

Work on media for wide diffusion (Technical sheet with clear instructions for construction and maintenance , comics, water puppet sketches.)

2.2 Village well in Phu-Lang

The basic well is finished (complete 10/7): a circular well and rectangular fence. The design differs from the preliminary dossier and is more adapted to the context. The solution of electric pump was given up, due to problem of management.

The village have contributed for a large part to the construction of the well but no estimate cost was submitted in June, but is being prepared (October).

Progress since June seems to have been slow, as is reflected in the comments for June and October progress as follows:

June recommendations:

Finish the implementation (Pulley/bucket)

Prepare clear instructions for maintenance of the well

October recommendations and comments:

Pulley not installed;

Plinth round well has cracked and settled, and needs to be broken, compacted into a solid base, and surface replaced.

Surround to the pond has not been finished.

This work is incomplete and the quality poor; it is a poor demonstration of the execution of an action. Remedial steps must be taken before the commune can be expected to take on the maintenance of the installation..

2.3. Rain water tanks

One has been built in Ninh Van, with a small filter. The tap has not been included, although it is on the drawings, and it was suggested by the villagers that the tap was a problem, since children would turn it on a waste water. Lien should evaluate and document the local comments and revise the designs as necessary.

Complete the dossier as requested in April (see 2nd Interim report and Water Supply report).

2.4. Washing point

Dossier ready for action in a new village, Chan Lu.

Work to start in October. Important to follow the advice of P.J. Meynell, see specialist report.

2.5. Experimentation

Some experimental filters and tanks were produced in CERPAD. No data available. These now need a comprehensive programme of testing. CERPAD should not abandon it's search for low cost filter solutions, and tests must be done to evaluate the work undertaken so far.

CERPAD must compare the different solutions / costs.

Water supply actions: family filters in Ninh Van



2.6. Water testing equipment

The equipment was ordered in May, and arrived in Hanoi in July (See description in Water supply Report). Most of the manuals have been translated, copies of which should be made for wider distribution. Four CERPAD staff members have participated in a short training Course (1 week in Laboratory, and 2 fields tests).

Equipment: Some more items are being purchased under the sub-contract, and some modifications being made to what has already been delivered. Action now needs to be taken to make use of this laboratory, in the form of CERPAD offering water testing services to its client provinces and communes.

Prepare a calendar of tests in Ninh Van

Analyse the cost of tests (samples, working hours, transport, costs of replacing chemicals and products.)

Documentation on use of equipment should be finished in a well presented dossier (Vietnamese).

2.7. Communication methods

No action taken;

Action should be taken to investigate alternative methods of communicating to people about water problems, about how to build the different items (filter, latrine etc), and about how to use and maintain them.

3.1 Latrines programme

It has been agreed to develop twin pit latrines in the commune; CERPAD plans to build 30 in this first phase of work, including two in the market.

There are however no visible signs of action. A number of things must be done:

Work should be done on developing suitable training and communication media for this activity (construction instructions; user instructions; maintenance guides; explication on problems of excreta use).

Prepare a complete dossier with drawings adapted to Ninh Van for October (take into account major problems : flooding areas, excreta disposal)

Organize a support campaign with Health Centre

Action is scheduled to start in Ninh Van Market in October, but is likely to happen later than this date.

General comment on W/S

* Moderately impressive work in the field, not always followed through to achieve the best results; insufficient focus on preparing the ground for other people to do the implementation work.

Study the results of P.J.Meynell mission, especially for :

- *design of economical solutions*
- *methods of water supply planning (questionnaire, matrix, choice of technology)*

4. Van le new settlement

An excellent Technical Dossier was prepared, as required. It includes :

- analysis of situation (organizations of houses, plots in Ninh Van)
- major problems for this new settlement : flooding area, size of plots to permit activities on the plot
- proposals for : house (spatial organisation), plot (dimension, orientation, organization), construction (three different levels -according to the functions and level of flooding), estimate quantities and costs for levelling earth (dig, fill).

To implement this new settlement programme, it would be necessary to organize (for September) technical advice to families in Van Le, with the support of models. This constitutes an additional element of the dossier (see below).

Status: Work stopped until 1992/93, because funds and labour not available, and pending completion of the road bridge beside the site.

Recommendation: that the dossier be completed with guide-lines for plot occupants about the development of their house, and that the completed dossier should then be developed as a case study training dossier (see Chapter 5.)

7. Road maintenance

A tractor (MTZ 50 hp, made in Soviet Union and adapted with concrete/steel wheels) has been ordered in June 91, and received by the Commune in September.

A daily note-book for use, maintain and repair of the roller before use in Ninh Van needs to be prepared, and a copy of the document provided in English, so that the results of monitoring can be followed. This is important in order to control the operating costs of the machine.

Prepare for road maintenance (started in October) :

- *a detailed manual for Ninh Van roads maintenance (situation, plan, works...)*
- *a training programme (with material) for the pilot maintenance part (1 km ?)*

For this action, the management factor is most important, and there is as yet little evidence that it is being addressed with sufficient detail.

Note: Important that all documents and notes given to Ninh Van are copied to the sub-contract, and copies retained in the CERPAD office for use on future projects.

8. Credit system

A critical area of work, and disappointingly, to date, no action has been taken, although CERPAD staff have been to Bangladesh and learnt about CREDIT systems in operation there. It is hoped that more attention will be paid to this issue in the Vinh Phu communes.

9. Stone production

A Dossier for comparison of two stone crushing machines has been prepared. It shows that two types of machine are available in Ninh Van for nearly the same output :

- one (from China, Hungary...) is efficient and durable, but costly (22 millions Dongs)
- the other (from Vietnam) faces many problems (size of raw materials, maintenance and repair), but cheaper (7 millions Dongs).

Action: Prepare the design of special spare parts (blades) for Vietnamese equipment and test in the field.

October: Nam is developing four new crusher blades. These will be tested on four existing machines in Ninh Van, with careful monitoring of repairs, productivity and costs. A fifth machine using normal blades should be monitored at the same time.

Action: complete dossier, for implementation in November, December and January.; make agreement with five stone crusher operators to participate in the experiment. Establish monitoring procedures.

10. Commune Market

A complete dossier has been prepared, including :

- repair of existing buildings
- construction of a new building, using stone technology (arches...)
- improvement of access (road, river) and public facilities (latrines, filter)

The design is now complete; the budget has now been revised to reflect inflation and also the fact that the commune has not obtained credit. The revised budget has indicated that a phased programme is now needed, with the construction of the main building in 1991/92, and surrounding upgrading (road, latrines, paving), but with the rehabilitation of existing buildings taking place in the 1992/93 period, with commune funds.

The budget review, and the need to clarify financial arrangements with the commune, has highlighted the importance of doing periodic budget reviews, and of setting output targets that are within the limits of available financing and resources.

11. Van Le - Tam Diep road.

1st phase started in May ; stone culverts finished achieved, and road foundations finished (earth coming from nearby mountain) despite difficulty in labour mobilization during some weeks (period of harvesting). There is no precise information available in English on organization/mobilization/supervision. Work is advancing on laying the stone surface;

Current needs:

Organize the work for phase 2, with equipment (tractor); Prepare means for real monitoring (labour productivity, costs, organization, supervision)

Passing places should be built on the road.

Dossier should show clear monitoring of costs for this operation;

Insufficient effort has been made to train district counterparts in this action, and this is thus a major weakness of the programme, and should be rectified.

Training dossier on road construction to be developed.



Chapter 4. Developing actions in Vinh Phu Province

1. Commentry

The identification of communes in Vinh Phu has now taken place. At the end of this exercise, each commune put forward a number of suggestions about what they regard to be the main problems to be addressed: 'school building and more classrooms'; 'bridge'; 'roads'; 'garden improvement' ¹. These and other generalised targets for action reflect global concerns. They do not define, however, the nature of the action which should now be undertaken to resolve the problem. 'Clinic's is cited as a problem in Xuan Vien, but, it remains to identify whether this means... improving the medicine supply? ...organizing medical staff?...informing the public about medical problems?... upgrading the level of hygiene in the existing clinic? .. or building new rooms. These are all options for action, and there are more besides. The definition of the problem, the identification of the resources that can be mobilised to resolve it, and the detailed approach that should be taken, all important parts of the work that has to be undertaken in the next few weeks.

2. Programming for Vinh Phu Province, Actions in communes B2 & B3

Work on the identification and implementation of actions in communes B2 and B3 is now, as of mid October 1991, starting. This work follows on from the planning and commune selection process (phase 1 of overall project methodology). Chapter 2 outlines the overall working framework and objectives which need to be followed by CERPAD in undertaking actions in Vinh Phu Province and other provinces which may follow. This has clearly described some new working practices for the Centre. Thus, in line with the objective of strengthening the provincial and district capacity to undertake rural development work, and to enable CERPAD to delegate direct action tasks to their counterparts in the provinces, work in B2 and B3 communes (Xuan Vien and Huong Son) will be undertaken as an on-going training programme, including the organization of several training workshops for province staff.

The following programme has been agreed upon:

1. Preparation of 1st Workshop for district, commune and provincial counterparts:

"General presentation of programme and issues;
Methods for detailed identification of needs and problems, and analysis of resources and capacities"
14th Oct - 23 Oct 1991

¹ *E. Whist, N. D. Khoi, and P.H. My: Selection process of communes for rural planning and implementation in Vinh Phu Province*

2. Workshop for district, commune and provincial counterparts:

"General presentation of programme and issues;
Methods for detailed identification of needs and problems, and analysis of resources
and capacities"
24th - 26th October 1991

3. Practical work in the communes B2 and B3: identification of needs and problems, analysis of resources and capacities.

November 1991

4. Mission by G. Chantry

Review of work so far on B2 and B3; preparation of 2nd Workshop: "Feasibility analysis
and identification of actions; formulation of detailed action dossiers"
Early December 1991

5. December - January. Development of actions.

January 1992: Missions by John Norton & Guillaume Chantry

Suggested participation in Workshops:**From each district:**

2 people from the construction department;
1 person from the agriculture department;
1 person from the planning department.

From the Province: one person from the Construction Department.

From each of the two communes: one person from the programme management committee.



So, many conditions are necessary for a wide diffusion of an "appropriate technology product":

- the "product" has to solve a real need, and also answers to a real demand.
- the "product" has to be designed taking into account the local habits.
- the "product" has to be easily available (in the "market").

As pilot actions in Ninh Van begin to be completed, and indeed for actions that have been taken in group A communes as well, it will now be important to evaluate social acceptance of the various actions undertaken, and, on a case by case basis, determine what objections there are to specific features, and take action to overcome them. For example, in Ninh Van the rain water tank has been designed with a tap at its base. This is not regarded as a necessary thing by the users, who fear that children will leave the tap open and waste precious water. It is thus up to CERPAD to identify the objections, and either modify the design and its associated budget, or, if it is felt important enough, persuade the users that the tap is good for improving health. The design may need changing. One way or an other, CERPAD has to take action.

Evaluating and analysing social appropriation is therefore going to be an important task for CERPAD in the coming months.

Communication

To make sure that each action is clearly understood and locally appreciated, it becomes increasingly important to develop good communication material. These will by necessity be varied - one cannot rely only on technical drawing and loudspeaker announcements although they play their part. CERPAD has to commit itself to developing more diverse media, and to do so in collaboration with other partners skilled in different fields, such as the Hanoi Water Puppets company, or television. Mobile videos exist in many of the communes, and there are opportunities for raising awareness through programmes in the schools. Posters can be used effectively, and so too can the demonstration of products in the public market places.

In each case, some key questions have to be answered if good communication is to be achieved:

- Who is the target group ? (local authorities, technicians, builders, general public...)
- Which are the traditional ways of communication among these groups ?
 - Having meetings with local authorities?
 - Giving manuals for technicians?
 - Exchanging experience on site for builders?
 - Organizing home to home visits, using local radio, communal video presentations, or theatre, in order to reach the general public with your message.
- What media resources exist in the district or commune that could be mobilised?
- What is the message one wants to deliver :
 - Educate people? (for example, that good health needs good water).
 - Promote a product? (ex. stoves burners are available in Ninh Van market).
 - Provide technical information and advice? (ex. how to build a CERPAD water filter.)

These questions start to define the nature of the media which should be developed. CERPAD then needs to approach these tasks with a spirit of willingness to develop not only new and perhaps un-conventional ideas in the technologies it recommends, but also in the development of the media that it uses to promote them.

Annex 1. Report by CERPAD on actions undertaken in Ninh Van up to October 1991

I/ Results of work have been done and work will be implemented.

- The agreement on plans and implementing of activities in 1991 - 1992 between CERPAD and People's Committee has been reached.

Specific activities:

1. Van le - Tam Diep road:

+ Finish the 1st stage: Finish banking road foundation (Earth + Mountainous earth) with its length : 1,100 m and surface width: 3,0 m ; road is now operated (with less 5 ton- lorry) and has ran from Van le bridge to Tam Diep township (connected to the Road No.1).

* Evaluation:

+ Work have been achieved as the plans with good quality of construction. It's to say that is the great efforts of commune.

+ Designs for implementing should be added : 1 - 2 traffic- cross-points should be built on this road.

* Work to be done in 2rd stage:

+ Build the surface road by stone

+ The commune has prepared enough stone, grinder-machine, tractor.

+ 2nd stage will be implemented from 10 - 12/1991.

2. Ninh Van market:

- In december/1991: The commune has mobilized working labour to embark market foundation, work has been continued to implement. Most of land market have been smoothed waiting for rolling.

- In November: after having finished harvesting crops, the commune will fix the boundary to expand market with the supervision of CERPAD and document attacked.

- The decision that has been reached after the meeting of selling and purchasing collective is that the collective have responsibility for repairing and improving old 9-stored house in market and distribute their apartments of that house for the users participating the operation of market. That's why the funding resource for repairing old house is from Selling and Purchasing Collective. Nevertheless, repairing must be according to designs under the control of Board of Leaders of Construction in the commune and the technical supervision of CERPAD.

- Funding resources of the commune:

+ 30 people that register to rent shops of market are ready to contribute money in market construction. Every selling shop is estimated at 50,000d. The total: 1,500,000 d.

+ Money of annually renting: 100,000 d for construction market

* The capacity of mobilizing working labour:

Estimated at 1500 working day

1500 w.d x 5000d/w.d = 7500,000d

(For new road construction, expanding market...) including the contribution of farmers, offices, enterprises and schools...

* The rest of funding is proposed to help from project in order to promote activities of market.

3. Phu lang village well:

- Basically, finish building well (depth: 5m, width: 3m)

and buying filter equipment which has not been put in.

- Dig foundation, pump water up from well and build stone fence .

Weakness: The edge of well has been cracked because of shrunk earth foundation, should be maintained immediately.

4. Family filter water tank:

- Having finished 28 family filter water tank according to designs and drawings with satisfied technique and good quality that everyone support.

- Plans of the commune by the of 1991: continue implementing 50 family filter water tank.

5. Improved stoves:

- CERPAD have come and seen to the commune for 3 times to develop mass media on implementation process of improved stoves. According to the needs of the commune, there are now two kinds of pilot improved stoves that implemented in Ninh Van: The first stove use wood and the rest use wood & straw... After experimenting people are very happy to realize that they are very efficient and economic (save fuel as to cook 2 - 3 pots at the same time and water is quicker to be boiled than before and everyone can use these kinds of stoves. Through implementation of 10 stoves prototypes the commune has developed more 20 ones.

- There are no designs and drawings of the above stoves

- Next plans: finish technical documents on improved stoves in Ninh van, designs and drawings will be attached and make their evaluations.

- From now to the end of this year, commune will develop about 200 family improved stoves according to the needs of commune.

6. Road maintenance:

- Having bought MT 250 tractor by USSR, replaced roller with steel wheel and delivered to Ninh van in 8/1991).

- Documents on economic and technical comparison of roller given to mr.Bill

- Finish Agreement Memo. with the commune when delivering roller.

- Finish putting concrete into steel wheel and going to put in.

- The commune has nominated 2 drivers (with motor driving certification) to operate. Instructions and diary on use, maintenance and repair of roller have been prepared to give the commune.

- The commune has plan to buy Romoc for tractor in order to increase its operation with economy and efficiency

for expenses of its operation.

- Prepared to maintain 1 km of road in Thuong - Dong quan from 15/10 to 11/1991.

- Prepared to maintain 400 m2 of road surface from the beginning of 11/1991 to 1992.

7. Stone production:

- Documents have been finished.

- Contents: Study spare parts for replacing: stone cutting-blazing for stone grinder machine by Vietnam in order to efficeint stone production and its duration.

- 1st stage: study and try to manufature one model (stone cutting-blazing) (3/10 to 15/10), chose 5 machines in 5 differnt places for study & experimentation. Funding resources for experimentation is from Sub-contract.

8. Study of applying building materials:

8.1. Stone dust is used for concrete (instead of sand). Nowadays use of Stone dust is popular in Ninh van commune for surface foundation... But these experiences have not been estimated on the basic of technique.

That's why documents on study of applying Stone dust for concrete are very neccessary to determine economic efficeint technique, from whence having the basic for mass media.

- Sub-contract pay for experimenting 1 apartment foundation of Ninh van market (12/1991).

8.2. Experiment cement tiles

- Having implemented applying Stone dust to produce cement tiles with saftified technique but more expensive than local sand & cement tiles

- Having plans to prepare enough cement tile, sand, Stone dust for Ninh Van market.

- Expenditure for holding technology transfer training course paid by Sub-contract.

8.3. Stone colume:

- Having built 2 kinds of stone columes (made of stone roller and brick) at the gate of pagoda in Thuong village. But the results are not satisfied becasue of giving much working labour.

- Recommendation: Stop experienting stone colume construction for Ninh Van market.

8.4. Build stone wall:

- Having a bathroom in the People's Committee with interesting results.

- Apply building stone wall for Ninh van market: Half dress stone masonry with this cement joint without plastering outside.

Time for implementing: 12/1991.

9. Water testing equipment:

- CERPAD has received water testing equipment.
- Having translated all English instructions into Vietnamese.
- Having held a short training course for 4 staffs of CERPAD (2 water engineer) from 16/9 to 22/9

On 3/10 : beginning to experiment on site in Ninh van.

10. Rain water tank:

- Finish Technical documents.
- Build a rain water tank made of stone at Mr.May's house in Van le village (5 m3 and small filter tank)
- + Family pay for material and working labour
- + Sub-contract deliver 300 kg cement.

Conclusion: Rain water tank is not satisfied as designs

(such as lack of tap that everyone can use). This matter will be added later on.

- Plans from now to the end of 1991: Build 2 tanks.

11. Washing place:

- Documents are prepared (figures attached).
- Experimenting activities on October at Chan lu village.

12. Latrine program: (twin latrine)

- Finish documents
- Experiment in Ninh van market (November)
- In 1991: develop 30 twin latrines.

13. Van le New settlement :

- Finish documents with satisfied results
- Plans for implementing Van le new settlement in 1992 -1993 after finishing Van Le - Tam Diep road construction and Van Le bridge.
- Nex steps: Master the number of family that register to build houses in Van le and guide technology and organization...

14. Training local builders in Ninh Van:

- It's necessary to hold a training course for local builders of the commune as the most active members in infrastructural construction in order to transfer appropriate building technology to local labors, to maintain and to develop next activities. When Project end activities. These people can undertake to develop their needs on the basis of the demands of the commune.

Sub-contract will pay for the training.