PEPAS .

Focalized Network Information Service Programme.

17 September 1984.

ON THE DEVELOPMENT OF PEPAS INFORMATION SERVICE

AND INFORMATION MANAGEMENT PROGRAMME

AND RELATED ACTIVITIES - II

- THE FOCALIZED NETWORK INFORMATION SERVICE PROGRAMME (FNP)

by

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PEPAS Environmental Systems Engineer

17 September 1984

*Attachment A1 - A6 and D1 -D2 of Annex 4 and the whole of Annex 6
have been prepared by Mrs Tan Yit May, PEPAS Special Assistant.
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Summary

This document is part II of the document with the same main title
which was prepared in March 1984. While the previous document (part I)
was prepared mainly for the sake of undertaking preparatory activities for
the development of PEPAS information programmes, the present document has
been prepared to present details of the proposed programmes and the
specifics of the workplan. The document provides details of the system
configuration proposed, the workload involved, resource requirements, and
possible problems and constraints in realizing the proposed plan.

However, the most important message that the writer attempted to
convey to the reader of this document is that talking about setting up an
information system at PEPAS is synonymous to talking about the future of
PEPAS. It is impossible to propose a design of an information system
without reflecting its conceptual basis to the basic philosophy in the
development of PEPAS itself as an institution. So this document goes
somewhat beyond what was perhaps expected of it. Some extrapolations and
assumptions had to be made about PEPAS and its future. The writer
believes, however, it was the only sensible approach by which to
conceptualize a system.

It was an extremely difficult task to come up with a concept which
makes sense for PEPAS. This is because there is no model, at least to the
writer's knowledge, which fits the kind of operations PEPAS carries out
today. For that matter, none of the existing models, in the writer's

view, provided any useful clues to answer one of the most basic questions about information system design of interest to PEPAS; how could one determine the true need for information by the potential information users working in the fields of water, sanitation and the environment in developing countries (Section 2)?

The writer proposed a system which is designed to carry out what is conveniently termed Focalized Network Information Service Programme (FNP). The system which is proposed was not meant to answer the above question. There is perhaps not any practicable approach to answering the question directly. The proposed programme only attempts to increase the chance of identifying the true needs and of the system being more relevant to the information users by having PEPAS interact with a limited target audience on a very specific subject for a very specific duration. In other words the system is designed for PEPAS to interact with a small segment of the target audience so as to eventually reach the general target audience more meaningfully. The system, therefore, is much more sophisticated than for example, putting out newsletters or collecting data and information without knowing the value of such activities (Section 3).

The concept seems to make sense but it is a very demanding system. There remain a number of operational questions still to be answered. Thus the concept has to be tested and the operational logistics have to be established (Section 4). The financial and manpower requirements will have to be met (Section 5) and other policy questions will also have to be answered (Section 6).

For this document and the propoed system concept to be evaluated properly, the main text has to be read thoroughly although it appears a bit verbose. The reader, who needs to establish the future resource commitments to PEPAS however, may wish to pay special attention to the three proposals presented as Annex 7 of the document. These proposals along with some of the policy questions set out in Section 6 will have to be properly responded to prior to PEPAS undertaking actual FNP activities on any significant scale.

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1.   BACKGROUND

In March 1984 a programme development document entitled "On the Development of PEPAS Information Service and Information Management Programme" was prepared by this writer in which a proposal was made that a technical visit should be made by a PEPAS staff member to some of the regional and global information centres having focus on the water supply and sanitation subjects. The objectives of the trip were to examine the possibility of collaboration with some of these institutions as well as to place the PEPAS programme development strategy in the proper perspective in relation to the on-going information service activities of other existing programmes. The trip was undertaken in June 1984 and visits were made to AIT (ENSIC) in Bangkok, SEARO in New Delhi, IRC (POETRI) in the Hague, WHO/HQ in Geneva and Water Resources Centre in London (see the trip report entitled "Report on Technical Visit to IRC and Other Agencies Engaged in Information Programmes Related to the International Drinking Water Supply and Sanitation Decade (IDWSSD)" July 1984, by this writer).

Subsequently, the writer has undertaken the task of preparing this document to set out in precise terms the kind of information service and information management programme which is most meaningful in terms of the potential impacts of the programme and the scope of long-term PEPAS resource commitments. The document also aimed at setting out the short-term and the medium-term workplan so as to make sure all the necessary coordination of work and synchronization of component projects could be accomplished. While this document makes reference to the PEPAS information management activities in general, special attention was drawn to the information service activities in relation to IDWSSD and hence to IRC (POETRI). The initial phase of the workplan, therefore, was intentionally linked with the special relationship with IRC that has emerged out of the aforementioned trip. It is to be specially noted also that the Library and Documentation Centre of the Universiti Pertanian Malaysia (University of Agriculture, Malaysia) has already been consulted on several occasions and has agreed in principle to collaborate with PEPAS on the execution of component activities of interest to it as well as to provide support services to the information processing activities where and when appropriate.

2. CONCEPTUALIZATION OF THE PROGRAMME DEVELOPMENT STRATEGY

In the aforementioned programme development document as well as in the trip report the writer expressed special concern about PEPAS undertaking information service and information management activities which may not be sustainable.

An information service activity falters mainly either because it is of marginal value to the target audiences or because it is of marginal value to the system providing such a service. In the case of PEPAS, the primary target audience consists of environmental health agencies of the Member State governments. Therefore the type of information service activities carried on should reflect the requirements of these agencies. At the same time such activities will have to be meaningful to the entire PEPAS operation including the ones responsible for managing the system. The acceptable design of the PEPAS information system may be found by balancing these two factors.

These two points need to be further elaborated before describing the basic conceptual ingredients in the design of the proposed PEPAS information system.

The value of information service to the users

The value of information service activities of interest to PEPAS is extremely difficult to determine for a number of reasons. Among other possible reasons, it is difficult to determine because:

i. Information systems are generally heavily subsidized

Most information service programmes in the field of public service functions such as water, sanitation and the environment are heavily subsidized and will continue to be operated even after their informational products have proven to be of marginal value to the users. For the same reason it is difficult to determine if the value of an information system outweighs the cost of running the service.

ii.   <u>Information users are often unaware of their own information needs</u>

On matters pertaining to daily routine functions, the potential information users are quite often unaware of their own information needs or unable to formulate their needs in specific terms. There is a strong tendency for potential users to formulate information needs, if requested to do so, in terms too general to be useful or in a too arbitrary fashion resulting in transactions of marginal significance between the information provider and the potential users. (In case of emergency, their information needs are stated much more specifically but generally the information provides are is not always prepared, nor should they be, to accommodate readily such information needs.)

iii. <u>The target audience generally does not make known the value of information to it by interacting with the information sources</u>

A large portion of the target audience does not interact with the information provider particularly when information is provided free. One weighs the value to him of performing work with the least amount of additional information against the trouble to which he has to go to get the information and thus perform better. Only if the trade-off is sufficiently attractive (often in terms of the personal gain accruing to him) would he seek information in a manner least troublesome for him).

iv.   <u>The potential information users rarely make immediate use of the information acquired and therefore the value would not be known to them for sometime</u>

In government operations it is seldom that the information provided from an information service programme is found to be of immediate use because the information rarely comes in time or on time, rarely comes in a readily digestible form, rarely fits the exact circumstances under which the potential users operate their functions, and the users can hardly identify themselves with the conditions under which the information

was generated. This tendency actually encourages non-commerical
information systems to proliferate as they can justify their existence
without having to prove their immediate worth. Any informaion could be
useful in someway sometime in future.

The value of information service activities to PEPAS

The value of information service activities to the information
system itself is also an important aspect for determining the information
system design. This seems particularly important in the case of PEPAS
because its primary strength lies in its unique capability to provide
direct technical collaboration services on a wide range of subjects almost
readily upon request. The information programme, at least for sometime
into the future, should be regarded as an activity performed in
conjunction with the main thrust activities such as consultancy service
and group educational activities. The scale of information programme
activities may become substantial as long as the programme does not drain
off valuable manpower resources from technical collaboration activities.
The most logical approach may then be to somehow integrate the information
service activities almost completely into the framework of technical
collaboration.

The above observations lead the writer to draw the following
conclusions:

i.   At least for the time-being a high priority ought not be given for
       PEPAS to serve as a regional information service centre on general
       environmental health subjects. Such an aspiration will deter the
       development of PEPAS and the information system so designed would be
       doomed to collapse or survive only with precarious justification;

ii.   Therefore, the PEPAS information system should not attempt to serve
       a non-specific institutional target audience with non-specific
       information products. The cost-effectiveness of general information

dissemination activities is too high (cost-high, effectiveness-low) and will produce little tangible impact. In addition there is already a proliferation of information systems, many operated more for the sake of institutional self-justification and survival, producing an over abundance of general informational products which are actually of little practical value to the real target audience;

iii. Instead, the PEPAS information system has to be geared toward serving itself for developing its own institutional insights so that its mainstream activities, technical collaboration and group educational functions will be undertaken most effectively. The information system will have to function as the antenna of the Centre for project formulation and follow-ups;

iv. The primary target audience of the PEPAS information system ought to be limited and focalized in the sense that individuals and institutions ought to be selectively integrated into one or more of the networks (focalized networks) based on their expressed interest in a specific activity or specific subjects (focal subjects e.g. compilation of training resources on drinking water quality surveillance).

The concept of the Focalized Network Information Service Programme (FNP) originates particularly from statements iii. and iv.

The original exercise to conceptualize FNP which will be described in detail in the following section, is shown in the form of a K-J Diagram in Annex 1 (See also a brief description of the K-J method of information synthesis attached to Annex 1). While the diagram was prepared more for the development of insight rather than to produce the specifics of the system design the following major descriptors generated in the course of a K-J exercise suggest that the FNP concept is already on the verge of formulation.

1. Aside from conventional reasons there are hidden reasons that an institution like PEPAS to want to institute an informtion system (The development of institutional insights is an often forgotten reason).

2. There ought to be some unique features in the PEPAS information
    system. It has to be very sensitive to user needs which are
    dynamic and are much different from many of the existing
    systems. In particular, information dissemination is
    synonymous to information dissipation unless certain provisions
    are made.

3. While simple dissemination would not be sufficient, even that
    dissemination has not been rigorously and systematically
    carried out in the past. The PEPAS internal informational
    resources, however, are already quite substantial and
    information dissemination of already acquired resource
    materials may be useful.

4. The PEPAS information system is not a commercial operation to
    which potential users of common interest subscribe. It has to
    deal with a much greater variety of information user types
    including some who do not want information. This makes the
    design of an information system quite complicated.

5. Regardless of the design of the PEPAS information system, some
    basic information processing activities have to be carried
    out. Although these activities are similar in nature to those
    carried out by other existing information systems, the outputs
    may be designed so as to cater for specific needs of the target
    audience.

6. The information to which users are likely to want to have
    access includes different categories of information products
    which suggest different kinds of activities to be undertaken by
    PEPAS. (The same information may have to be repackaged for
    different users. For example, a number of WHO publications get
    filed away because they are too lengthy although they may be
    potentially quite useful. Abridged or digest versions of such
    documents may be quite useful.)

7. It is of course essential to ensure that best use is made of
    already produced informational outputs so that we may become
    fully aware of the relative position of PEPAS in respect to
    other systems as well as to the outputs they have already
    produced.

8. Even if we become fully aware of the relative position of
    PEPAS, we also have to know the needs of the region before
    PEPAS can undertake to provide meaningful information service
    activities. (Some regional survey activities are essential.)

9. Particular attention has to be paid to the differences in orientation of the role and functions of PEPAS and those of UPM (For UPM to collaborate effectively with PEPAS, PEPAS and WHO have to be relevant to UPM operations).

10. Further, the kinds of service activities not only the information products for information users will have to be designed differently depending on the subject as well as on the types of target audience. Otherwise the value of information gets lost or diluted and that will have detrimental effects on the long-term operations of PEPAS. (For certain kinds of information and information users, interactive services like a query-response programme would be more meaningful than the periodical feed-in services).

11. In addition, we should carefully select the target audience, by carefully noting the possible motivations for them to be associated with PEPAS informational products.

12. The target audience may be grouped in some logically and logistically meaningful way. Such groupings may be called focalized networks.

13. In developing focalized networks certain seed activities need to be identified. Naturally, many of them are those which PEPAS has an easy entry point into.

14. Once focalized networks are identified, then the networks will have to interact wth PEPAS regularly to promote free flow of information, noting the prerequisite conditions for the network participants to react positively.

15. The number of focalized networks and the associated workload have to be carefully planned taking into account the existing PEPAS resource constraints.

16. There are certain things one should do and certain other things one should not do with respect to interacting with focalized networks. (For example, offering services which cannot be sustained would be extremely detrimental. The participants will lose faith in the system.)

17. Any group training activities could be considered as potential seed activities for the formulation of focalized networks.

18. Once a network is formed, then it takes a great deal of effort to sustain communication within the network and between PEPAS and the network.

19. PEPAS facilitation would have to be innovative to sustain the focalized network operations.

20. Provisions have to be made for the mobilization of financial resources.

21. Manpower planning requires rather careful planning and may even require unconventional measures.

22. The development of operational routines would take time and a trial and error approach.

The relationship among these major category headings of issues are shown in the K-J Diagram in Annex 1 which is also shown in Figure 1 below.

The detailed descriptions of specific issues which come under each of the above descriptions are also presented in entirety in Annex 1.

3.   THE FOCALIZED NETWORK INFORMATION SERVICE PROGRAMME (FNP)

In essence FNP is a collection of multiple network formations of relatively small size each undertaking a combination of a collaborative gathering and requirements of information of special interest and the facilitation by PEPAS with Selective Information Dissemination (SID). While the fine details of the operation will have to be established through experiments, the following are some of the essential features most likely to be imbedded in the final design:

i.   The selection of the primary target audience candidates (network participants) should have some past linkage or contacts so that they are actually known in person to PEPAS. Preferably they should not be just the names of functional units of agencies (this will not automatically exclude potentially resourceful candidates since as the activity proceeds PEPAS will most likely identify them as potentially important network participants and will establish linkage with them). The network participants ought to be made aware of exactly what is expected of being a part of the network with respect to the ultimate gain for themselves and their contribution to the other participants.

ii.   The selection of focal subjects will be primarily based on the findings of the past and on-going technical collaboration and group-educational activities undertaken by PEPAS or by EH/WPRO.

3 PEPAS informational resources quite substantial.

5 Pursue Basic Activities but take advantage of unique PEPAS position.

7 Must know what has already been done by others and develop unique PEPAS programme.

Clarify the Justification

1 Hidden reasons for having PEPAS information programme.

WHY?

2 Users make or break the system.

8 Needs survey of PEPAS contacts also essential.

Needs Characterization

4 Need to accommodate different user types differently.

Background Analysis

9 Explore ways to make the most out of UPM's support.

POETRI
Other contacts

13 Entry points to focalized networks are identifiable.

17 Networking and group training activities are closely linked

Outcome of Analysis says

12 Formation of focalized networks may be one approach

Crucial Factors to Consider

6 Information service design would have to be defined in detail according to types of information sought.

10 User types also affect the design of service types. Better service means more cost but more user support.

11 Selection of target audience also affects service type and service level as well as workload.

16 There are things to do and things not to do about network facilitation from PEPAS.

14 It takes some thinking to make the networks functional.

15 The network activities need to be sustainable. Realistic design very important.

Realistic scope and Positive Approach

18 To sustain the network operations PEPAS facilitation plans need to be carefully developed.

19 Innovative approaches would make facilitation easier.

Plan of Action

22 Some operational logistics need to be elaborated

Strategy development

20 Financial mobilization to be elaborated.

Adoption of a flexible plan

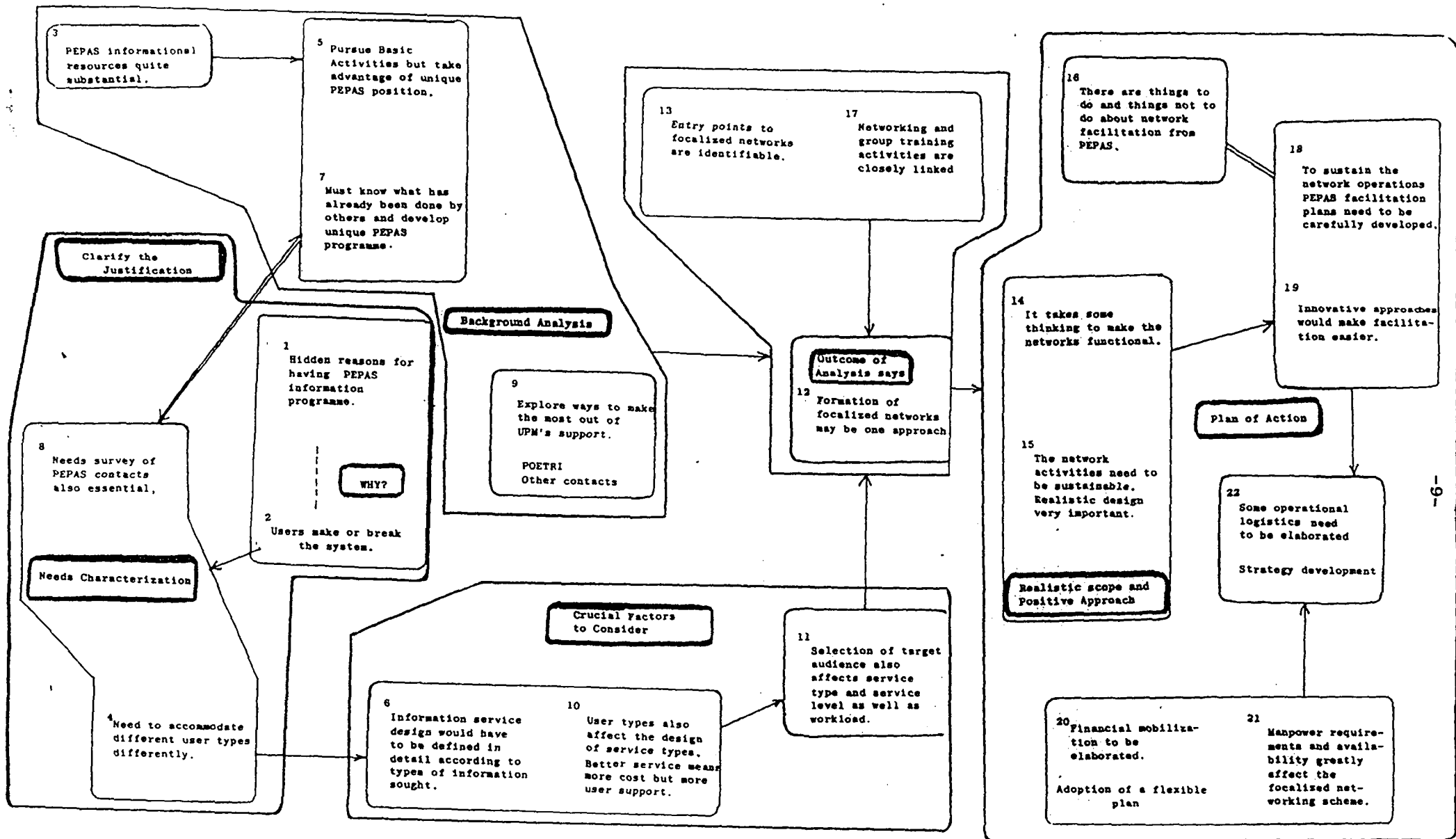21 Manpower requirements and availability greatly affect the focalised networking scheme.

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Figure 1   Development of a Conceptual Framework

PEPAS Information System and its Component Programmes

iii. The network activities will focus on producing specific target informational output of special interest to the participants in the form of consolidated knowledge through network interactions rather than on general information transfer and exchange in the conventional sense of the words. The network interactions (information transfer and exchange) take place only as intermediate steps to produce the output. (For example, if the focal subject was the compilation of training resources on drinking water quality surveillance, the regular updates of the compiled resource materials obtained from within and from outside the network, among other relevant resource materials obtained by PEPAS as well as by the network members may be transmitted to the other members, through the network in addition to the desired output compilation at the termination of network activity).

iv. Upon termination of the information output, either upon completion of network activities or upon realizing the network would not function as desired, the network will be dissolved for possible integration of participants into other new or existing network activities or into the general target audience pool.

v. the general target audience (individuals and agencies with which PEPAS maintains loose informational contacts) may be kept informed of the focalized network activities for their possible involvement in network activities along with other general information updates (See 4.2 Central Information Processing (CIP) activities.) They are, in general, kept out of the interim interactions between the participants and PEPAS unless they make a specific request to be integrated into a network upon learning about the activities in progress.

vi. The insights gained in the process of network activities will form a basis for the formulation of a workplan on the follow-up of PEPAS technical collaboration projects and group educational activities.

In addition to FNP activities, the general target audience including the official contacts of WHO will continue to be served with relevant information on an as-needed basis. A simple news bulletin which carries the status report of the FNP activities should be issued regularly to keep the general target audience informed of the achievements of the focalized networks.

Two figures included in Annex 2, also shown as Figures 2 and 3 below illustrate the concept of FNP in a self-explanatory manner.

4.   WORKPLAN

4.1   FNP activities

The scope of coverage and the scale of operation of the FNP activities to be performed at PEPAS depend on PEPAS resource constraints and the viability of the programme as a sustainable operation. It is difficult at this moment to make a meaningful assessment of the workload and the possible response from the potential network participants or current PEPAS contacts. The concept may have a number of logistic shortcomings which will have to be ironed out before the programme could be implemented on any significant scale. The routine operations also require the development of some kind of operations systems including the preparation of a basic informational resource inventory by subject, a directory of existing contacts and a list of potential future contacts, etc. some of which have already been undertaken. All of the related past, on-going and future PEPAS activities will have to be interlinked in some meaningful way so that from the sum total of all a sensible workplan will be developed.

Provided below in Figure 4 is a proposed event diagram illustrating how these activities may be undertaken sequentially so that the FNP concept may be gradually operationalized with suitable conceptual and operational modifications. It is to be noted that a number of PEPAS group meetings are linked with the mainstream activities which include, in addition to those already mentioned in Section 1, regional surveys of
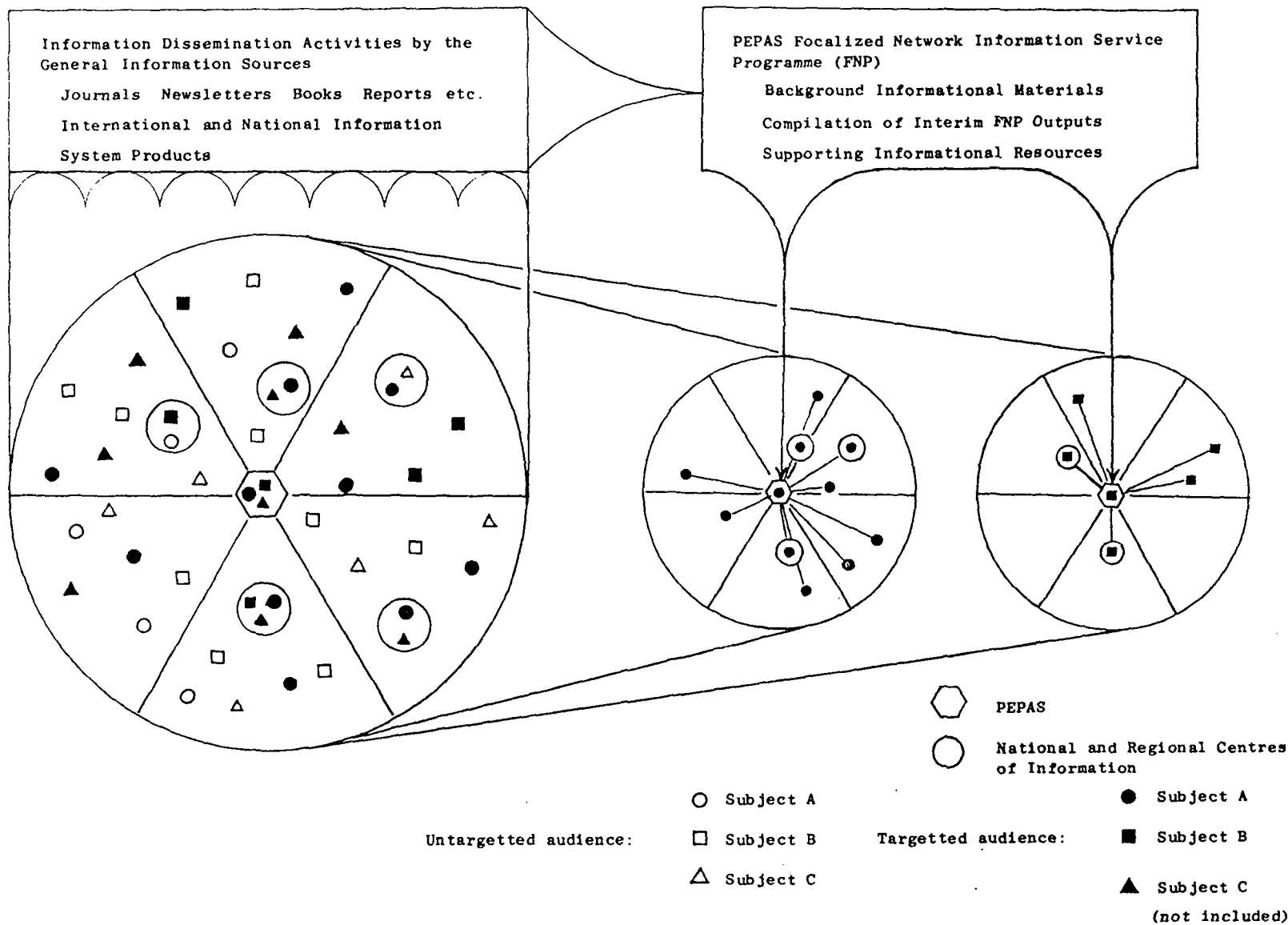
Figure 2   The Relationship Between the General Information Sources, FNP(PEPAS), and the Target Audience
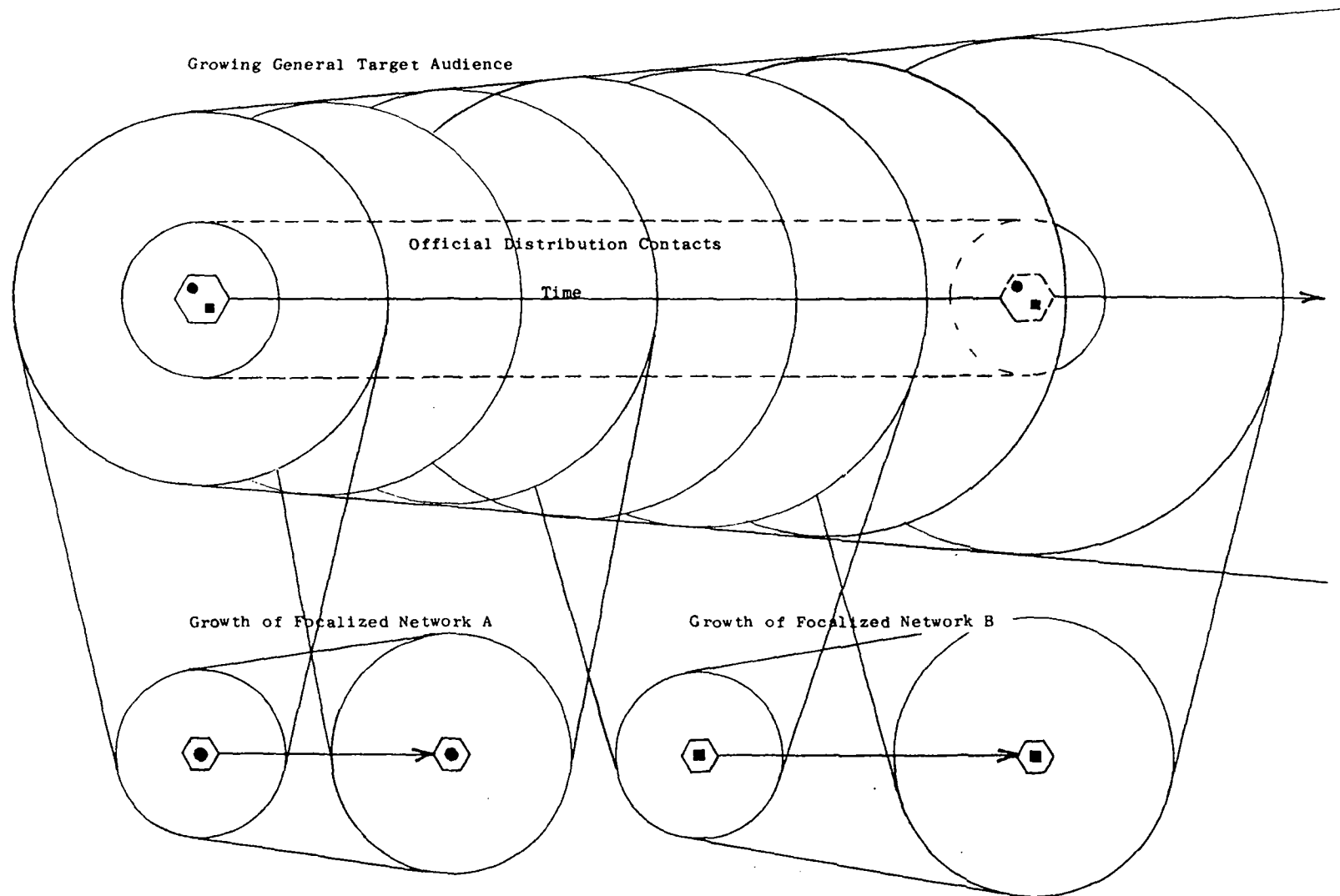
Figure 3   Relationship Between Network Focalization, Network Growth, and Time

1. Preparation of Programme Development Document I
   (March 1984 by ESE and SA)

2. Visit by ESE to IRC and other global and regional
   information activity centres
   (June 1984)

3. Conceptualization of system design by ESE
   (July - August 1984)

4. PEPAS internal consultative meetings and meetings
   with UPM Library and Environmental Studies staff
   (July - August 1984)

5. Preparation of Programme Development Document II
   on the Focalized Network Information Service
   Programme (September 1984)

Conceptualization of pilot projects

A. Malaysian MOH/ PEPAS collaboration project on
   national drinking water quality surveillance
   information support system development

   6. Focalized information support activities
      for the State of Negri Sembilan
      (January 1985 - December 1985)

   7. Development of regional linkage and
      dissemination structure on drinking
      water supply quality assurance infor-
      mation; a proposal to be submitted to
      IRC(POETRI) for support (September 1984) *

B. UNDP/WHO Biregional Decade Advisory Project

   8. Focalized information support activities
      for the Kuala Lumpur Workshop participants
      (January 1985 - December 1985)

   9. Development of regional linkage and
      dissemination structure on water supply
      and sanitation software components; ———>
      a proposal to be submitted to IRC(POETRI) *
      for support in conjunction with item 7
      (September 1984)

C. WPRO/EH field staff information support system
   development

   10. Focalized information support activities
       for participating staff (January 1985-
       December 1985)

11. UPM/PEPAS collaboration programme on Malaysian and
    regional environmental information bibliography
    compilation (on-going as of September 1984)

Conceptualization of pilot project

   12. Provision of support activities to the Environ-
       mental Management and Research Association of
       Malaysia, ENSEARCH (under consideration as of
       September 1984)

13. Regional surveys of information sources on selected
    environmental subjects (as required)

14. Evaluation of the FNP
    concept based on pilot projects
    (October - December 1985)

15 Refinement of the concept and
   identification of linkage and
   dissemination structures on key
   focalized subjects
   (October-- December 1985)

16. Technical visits to sources of
    information for institutional
    information source network forma-
    tion (November 1985)

17. Preparation and submission of a
    proposal to external funding
    agencies for possible support for
    the focalized information network
    activities operated by PEPAS
    (November 1985)

18. Undertaking of additional FNP
    activities (January 1986 on)

19. Technical visit to REPIDISCA/CEPIS
    by a PEPAS staff member (at
    appropriate future time)

a. PROC DWQ surveillance seminar(Oct. 84)

b. Environmental planning seminar(Nov. 84)

c. Appropriate technology seminar(May 85)

d. WPRO/EH staff consultation(? 85)

e. Refuse and excreta seminar(Oct. 85)

f. PEPAS Advisory Committee meeting(Sept. 85)

g. National and regional seminars (1986-87)

Figure 4   Event Diagramme of the Past and Proposed PEPAS Information Programme
Development Activities

information sources on environmental subjects, evaluation of the FNP
concept based on the results of pilot projects, technical visits to
sources of information for institutional information source network
formation, and undertaking of additional FNP activities.

Pilot projects

Prior to embarking upon routine FNP activities on any significant
scale it is proposed that three pilot scale projects be undertaken so that
the experience gained through these pilot projects could be reflected in
the development of the long term workplan and the operational procedure of
FNP.   These pilot projects could be undertaken also as an initial seed
activity for PEPAS to serve as a Regional Focal Point of POETRI (IRC) for
which some financial provisions have been made by IRC to PEPAS. The pilot
projects proposed are:

i.   Facilitation of the Malaysian National Drinking Water Quality
       Surveillance Programme (Focal Subjects and Target output:
       Preparation of the Handbook of Tips and Episodes for Successful
       Drinking Water Quality Surveillance in Malaysia (tentative title),
       Focal Network Participants: The State Workshop Participants in the
       State of Negri Sembilan, Malaysia, Target Dates: 1 January 1985 -
       31 December 1985)

ii.   Facilitiation of the UNDP/WHO Biregional Advisory Service Project
       (Focal Subjects and Target Outputs: One or more of the following
       inputs to supplement the on-going efforts by the Project Advisors
       who are now engaged in the preparation of the planning guidelines.
       (i) compilation of the fruits for thought on community education and
       participation, (ii) compilation of appropriate technology episodes
       such as "When Apropriate Technology is Appropriate and When it is
       Inappropriate", (iii) collection and assembly of the already
       available National Guidelines on Rural Water Supply and Sanitation
       Projects, (iv) compilation of information on institutional
       establishments, how they are intended to function and how they

actually function (all tentative titles); <u>Focal Network
Participants</u>: Participants of the two previous UNDP/WHO workshops,
the two regional focal points of the Advisory Service Project, as
well as individuals and institutions possibly interested in the
network activities; <u>Target dates </u>: 1 January 1985 -
31 December 1985.

iii. <u>Facilitation to the WPRO EH Field Staff</u> (<u>Focal Subject and Target</u>
      Output: Information Bulletin of the activities of EH field staff and
      PEPAS staff on water, sanitation and the environment;
      <u>Focal Network Participants</u>: All those agreed to participate: <u>Target</u>
      <u>Dates</u>: 1 December 1984 - 31 November 1985)

More detailed descriptions of these pilot projects are provided in
Annex 3.

<u>Beyond pilot projects</u>

When the conceptual and operational shortcomings are identified and
properly ironed out through the experimental operation of the three pilot
projects, additional FNP activities will have to be undertaken more or
less on a routine basis. The scope of FNP activities could be expanded to
cover the areas of interest to as many of the PEPAS staff members as
possible. The selection of focal subjects and target audiences as well as
some preparatory work including preliminary correspondence and regional
surveys may be carried out prior to the actual implementation of FNP
activities.

Table 1 gives examples of some FNP activities and associated CIP
(Central Information Processing - to be described later in the text)
activities which could be carried out after the pilot FNP projects have
been completed. The table shows an estimated workload at different levels
of manpower resource mobilization for each of the FNP activities
coordinated by an individual staff member in collaboration with the
overall coordinator(s).

TABLE 1 - ASSESSMENT OF WORK LOAD FOR FACILITATING ADDITIONAL FNP ACTIVITY
EXAMPLES (MAN-MONTHS/PROJECT) *

| | NETWORK | LEVEL OF WORKLOAD FOR COORDINATOR | | | | | | | | | COORDINATOR** |
| | | LEVEL 1 | | | LEVEL 2 | | | LEVEL 3 | | | |
		FNP	CIP	FNP	FNP	CIP	TOTAL	FNP	CIP	TOTAL	
1	Environmental Health Policy Issues	0.5	0.5	1.0	0.5	1.0	1.5	1.0	1.0	2.0	D/P
2	Water Supply and Sanitation Technology Atlas in WPR	0.5	0.5	1.0	0.5	1.0	1.5	1.0	1.0	2.0	DE
3	Operation and Management of Refuse and Excreta Disposal Systems	0.5	0.5	1.0	0.5	1.0	1.5	1.0	1.0	2.0	WQMA
4	Drinking Water Quality Surveillance Procedures	0.5	0.5	1.0	1.0	1.0	2.0	1.0	1.5	2.5	ESE
5	Toxic and Hazardous Waste Management	0.5	0.5	1.0	1.0	1.0	2.0	1.0	1.5	2.5	EP
6	Health Aspects of Air Pollution	0.5	0.5	1.0	0.5	1.0	1.5	1.0	1.5	2.5	AQMA
7	Manpower Training Techniques and Methodologies	0.5	0.5	1.0	1.0	1.0	2.0	1.0	1.5	2.5	SA
	TOTAL	3.5	3.5	7.0	5.0	7.0	12.0	7.0	9.0	16.0	

* Workload excludes that on document consolidation activities which is accounted for separately.
** ESE and SA to coordinate the overall network system.

NOTES

1. <u>Networks</u>

(1) Environmental health policy issues

- to cater for systematic information exchange on the status of some selected environmental health national programmes of interest

- to make use of existing administrative contacts

(2) Water supply and sanitation technology

- regional profile of water supply and sanitation technology

Directory of Sources.

- the network to consist of selected government agencies, information centres, academic institutions and individuals in the private and public sectors

- currently available directories on the subjects to be consulted

(3) Operation and management of refuse and excreta disposal systems

- the network to include individual projects and programmes in addition to government agencies in charge

- to be based on the forthcoming PEPAS workshop on the subject

- UNDP/WHO workshop recommendations to be reviewed

(4) Drinking water quality surveillance

- to use previously established contacts through PEPAS training workshops

- Malaysian national programme to be used as a demonstration project

(5) Toxic and hazardous waste management

- to use previously established contacts through various PEPAS training workshops and seminars

- NEPC/Philippines to be taken as a catalytic activity

- IPCS/IRPTC information base to be integrated

(6) Health aspects of air pollution

- network to be established through AQMA contacts
- Korean and Malaysian programmes to be taken as possible demonstration projects

(7)   Training resource development

HIRD

 -    existing training resource development centres to be contacted as sources of information

 -    inputs from other network activities to be integrated

2.   Workload levels

(1)   Level 1   To do whatever can be done within available means. Make best use of already existing PEPAS resources; confine the network to a manageable size.

(2)   Level 2   To facilitate networks with an addition of one sub-professional staff. The network facilitation would become more regular and frequent.

(3)   Level 3   An additional professional information officer (or having SA devote her time) with secretarial assistance would be necessary. The network facilitation would have to be on a regular and frequent basis.

3.   FNP and CIP

FNP: Focalized Network Information Service Activities
CIP: Central Information Processing Activities
        (to be described later)

The details of the actual workplan including the selection of appropriate focal subjects will have to be formulated at appropriate future time.

4.2 Central Information Processing (CIP) activities

As stated earlier it makes much better sense to regard FNP as a sensory mechanism of the PEPAS technical collaboration programme for gaining institutional insights rather than as an information service programme.

For the FNP activities to be carried out successfully, however, the central information processing (CIP) activities will have to be carried out just as much as in the case of ordinary information dissemination activities popularly undertaken by many of the existing systems. The relationship between the FNP activities and the CIP activities could be clearly and most meaningfully established as shown in Figure 5. One of the most important observations to be made of this figure is that in many of the existing information systems as well as in the current PEPAS operation the three stages of focalization of information (consolidation, targeting and networks) are either totally missing or only casually undertaken without systematic facilitation unlike the concept proposed in this document.

A comprehensive list of information processing activities of interest to PEPAS is presented in Annex 4, which with attachments giving the complete inventory of past PEPAS accomplishments, include the following categorical headings:

> A. INFORMATIONAL MATERIALS PRODUCED IN CONNEXION
> WITH ROUTINE OFFICIAL AND SEMI-OFFICIAL PEPAS ACTIVITIES

1. Assignment reports prepared by PEPAS staff and short-term consultants

2. PEPAS regional group training activity reports
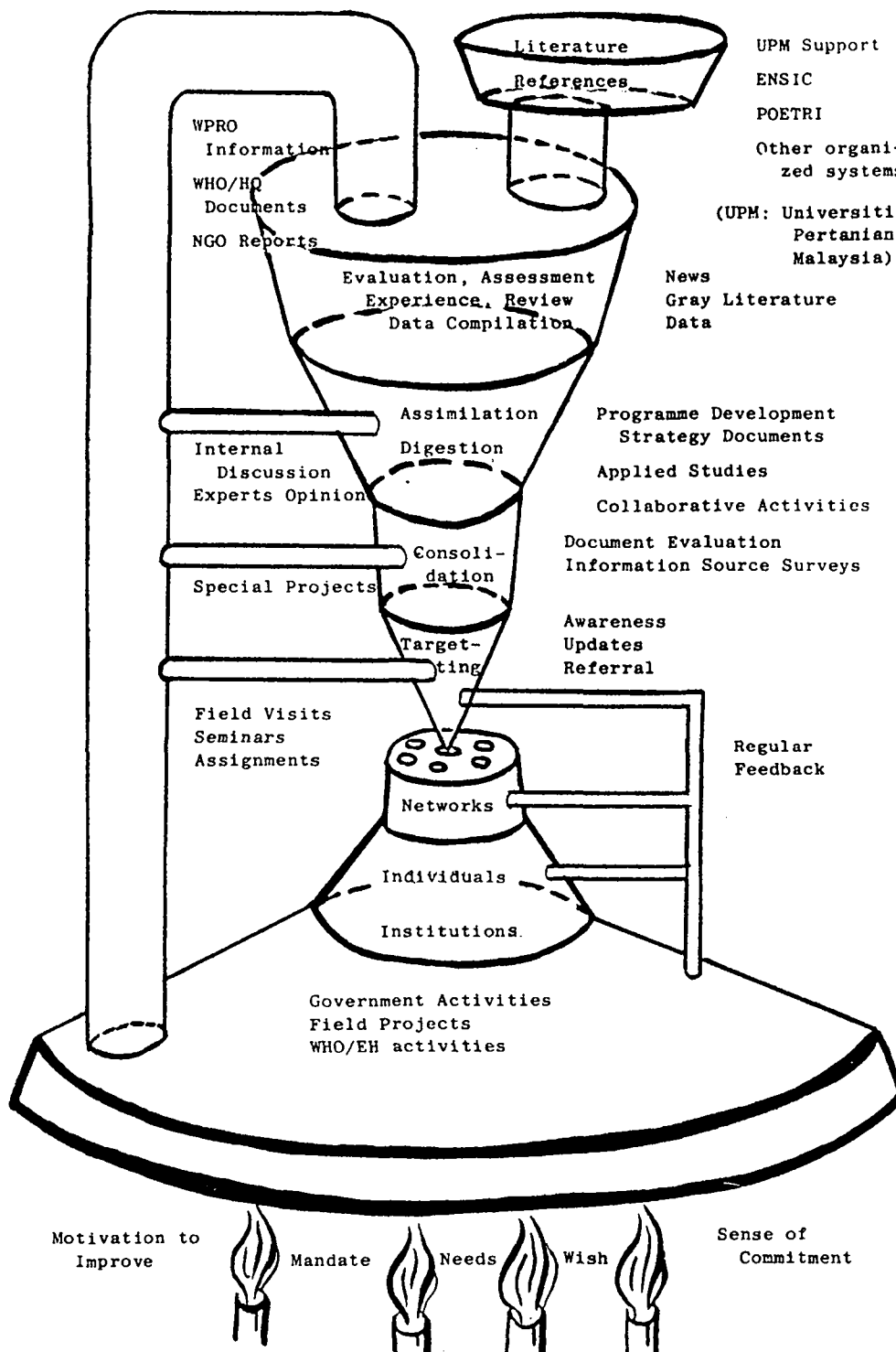
3. PEPAS technical documents

Literature References

UPM Support

ENSIC

POETRI

Other organized systems

(UPM: Universiti Pertanian Malaysia)

WPRO Information

WHO/HQ Documents

NGO Reports

Evaluation, Assessment Experience, Review Data Compilation

News Gray Literature Data

Assimilation Digestion

Programme Development Strategy Documents

Applied Studies

Collaborative Activities

Internal Discussion Experts Opinion

Document Evaluation Information Source Surveys

Consolidation

Special Projects

Targetting

Awareness Updates Referral

Field Visits Seminars Assignments

Networks

Regular Feedback

Individuals

Institutions

Government Activities Field Projects WHO/EH activities

Motivation to Improve

Mandate

Needs

Wish

Sense of Commitment

Figure 5

A Conceptual Schematic of Information Condensation and Dissemination Through Focalized PEPAS Information Networks

4. PEPAS staff and consultants' papers prepared for regional and national group training activities and non-PEPAS meetings

5. Publications prepared by national governments on PEPAS-supported activities

6. PEPAS special activities on bibliographic and referral documentation

B. COMPILATION OF PUBLISHED RESOURCE MATERIALS FOR INTERNAL AND EXTERNAL REFERRAL SERVICES

1. General collection of books

2. Professional journal subscriptions

3. WHO publications for public distribution

4. Important publications prepared by other UN and NGO agencies

5. WHO internal programme documents

6. Other documents

7. Personal collections of staff

C. CONSOLIDATION OF INTERNALLY PRODUCED PEPAS OUTPUTS AND EXTERNALLY OBTAINED RESOURCE DOCUMENTS

1. PEPAS Circular

2. Annual report (or summary of activities)

3. Information sheet (or occasional updates)

4. Technical monographs

5. Guidelines

D. COLLECTION AND COMPILATION OF RESOURCE DOCUMENTS FROM ALREADY ESTABLISHED CONTACTS

1. Items under Sections A(5) and A(6)

2. Compilation of general information source lists

3. UN Water-Decade related directories and lists

4. Documents on subjects of special interest

5. Products of major environmental information systems of interest

E.   COMPILATION OF REGIONAL SURVEY RESULTS

1.   Regional surveys already conducted by PEPAS and outputs produced

2.   Assessment of Global Environmental Monitoring System (GEMS) data
     and information

3.   Consolidation of country papers prepared for PEPAS regional
     group training activities

4.   Regional surveys known to have been conducted or most likely
     conducted outside PEPAS

5.   Regional surveys which could be meaningfully undertaken by PEPAS

F. DEVELOPMENT OF TRAINING SUPPORT AND INFORMATION SYSTEM
SUPPORT MATERIALS

1.   Training manuals, guidelines, codes of practice (see also A(5)
     and C(3)

2.   Audio-visual support materials

3.   Micro computer software collection for use in training activities

These CIP activities can be most meaningfully interpreted when they
are associated with dissemination targets and desirable methods of
dissemination (Table 2 below),. with potential work load, possible value to
the potential information users, financial resource requirements,
feasibility and priority of implementation (Table 3 below), and with
estimated workload of PEPAS staff and possible involvement of PEPAS
contacts (Table 4). These tables together ensure realistic execution of
CIP activities and monitoring of their progress.

It is to be noted that as in the case of FNP activities all CIP
activities will have to be carried out in phases and that the current
level of supporting staff will have to be reinforced if these activities
are to be carried out satisfactorily (see also Section 5 for the estimated
resource requirements).

Collaboration with Universiti Pertanian Malaysia (University of
Agriculture, Malaysia)

UPM Library has long indicated its willingness to collaborate with
PEPAS as well as to support PEPAS activities in regional information
dissemination with its rapidly increasing information management

Table 2   INFORMATION DISSEMINATION TARGETS AND INFORMATIONAL PRODUCTS*

	CHANGING POLICY	A. PEPAS	A (1)	A (2)	A (3)	A (4)	A (5)	A (6)	B. PEPAS	B (1)	B (2)	B (3)	B (4)	B (5)	B (6)	B (7)	C. CONSOL	C (1)	C (2)	C (3)	C (4)	C (5)	D. CONTAC	D (1)	D (2)	D (3)	D (4)	D (5)	E. SURVEY	E (1)	E (2)	E (3)	E (4)	E (5)	F. SUPPORT	F (1)	F (2)	F (3)
1. WHO official contacts in the National Health and Environmental Agencies	E		R	R	R	R	R	S		L	L	L	L	-	-	-		*	*	S	S	S		L	L	L	L			S	S	S	S	S		R	R	R
2. Regional and National Information Centre and Libraries of Significance	E		R	R	R	-	R	S		-	-	L	L	-	-	-		*	*	S	S	S		L	L	L	L			S	S	S	S	S		R	R	R
3. International Agencies	E		R	R	R	-	R	S		-	-	-	L	-	-	-		*	*	S	S	S		L	L	L	L			S	S	S	S	S		R	R	R
4. WHO Units and Staff Members																																						
Administrative contacts																																						
4.1 WPRO	-		*	*	*	R	R	S		L	L	-	L	-	-	-		*	*	-	S	S		-	-	-	-			S	S	S	S	S		-	-	-
4.2 HQ	-		*	*	*	R	R	S		L	L	-	L	-	-	-		*	*	-	S	S		-	-	-	-			S	S	S	S	S		-	-	-
4.3 Other Regional Offices	E		R	R	R	R	R	S		-	-	-	L	-	-	-		*	*	-	S	S		-	-	-	-			S	S	S	S	S		-	-	-
Technical contacts																																						
4.4 EH field staff	F		R	R	S	S	R	S		L	L	-	L	-	-	-		*	R	S	R	R		L	L	L	L			R	R	R	R	R		R	R	R
4.5 Individuals with special interest	F		R	R	R	R	R	S		-	-	-	L	-	-	-		*	R	S	R	R		L	L	L	L			R	R	R	R	R		R	R	R
5. Limited number of general technical contacts																																						
Individuals																																						
5.1 in the academic circle	E		R	R	R	R	R	R		-	-	-	L	-	-	-		*	R	S	R	R		L	L	L	L			R	R	R	R	R		-	-	-
5.2 in the public sector	E		R	R	R	R	R	R		-	-	-	-	-	-	-		*	R	S	R	R		-	-	-	-			R	R	R	R	R		-	-	-
5.3 in the private sector	C		R	R	R	R	R	R		-	-	-	-	-	-	-		*	R	S	R	R		-	-	-	-			R	R	R	R	R		-	-	-
Establishments																																						
5.4 Professional Associations	E		R	R	R	R	R	R		-	-	-	-	-	-	-		*	*	R	R	R		-	-	L	L			R	R	R	R	R		-	-	-
5.5 Consulting firms	C		R	R	R	R	R	R		-	-	-	-	-	-	-		*	*	R	R	R		-	-	L	L			R	R	R	R	R		-	-	-
5.6 Publishing houses	E		R	R	R	R	R	R		-	-	-	-	-	-	-		*	*	R	R	R		-	-	-	-			R	R	R	R	R		-	-	-

Note: For section D. CONTAC, the column header reads "SAME AS A (5) AND A (6)".

KEYS   C : Charge nominal fees
       F : Free of charge
       E : In exchange for informational material
       S : Selective dissemination
       R : Upon-request dissemination
       L : List-only dissemination
       - : Not applicable
       * : Routine distribution

* This matrix excludes routine distribution of
  PEPAS official documents.

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Table 3   PRIORITY ASSESSMENT MATRIX FOR THE CENTRAL INFORMATION PROCESSING (CIP) ACTIVITIES

	A. PEPAS	A(1)	A(2)	A(3)	A(4)	A(5)	A(6)	B. PEPAS	B(1)	B(2)	B(3)	B(4)	B(5)	B(6)	B(7)	C. CONSOL	C(1)	C(2)	C(3)	C(4)	C(5)	D. CONTAC	D(1)	D(2)	D(3)	D(4)	D(5)	E. SURVEY	E(1)	E(2)	E(3)	E(4)	E(5)	F. SUPPORT	F(1)	F(2)	F(3)
1. Additional workload on PEPAS																																					
1.1 Editing, listing, compiling	-	-	-	-	-	-		L	L	L	L	L	L	L	-	L	M	H	-	-			-	L	-	-			H	-	H	-	-		-	-	-
1.2 Documentation/editorial	-	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-			M	-	-	-			-	H	-	-	-		-	-	-
1.3 Collection/compilation/ documentation	-	-	H	-	-	-		-	-	-	-	-	-	-		-	-	-	V	V			-	-	V	M			-	-	-	H	V		V	M	M
2. Degree of UPM support required and its workload	-	-	-	-	-	-	H	-	-	-	-	L	-	L	-	-	-	M	M	M			M	L	V	-			-	-	-	M	M		H	H	M
3. Value of products to users																																					
3.1 Governments	P	M	V	M	V	M		M	L	H	H	-	M	H		H	V	V	H	H		SAME AS A(5) AND A(6)	V	P	H	-			V	M	H	H	V		V	H	H
3.2 WHO/EH staff	P	M	V	M	H	M		M	-	L	H	-	H	H		H	V	V	H	H			V	P	V	-			M	M	H	H	H		V	M	H
3.3 Others willing to maintain contact with PEPAS	P	L	H	M	H	H		L	L	P	P	-	L	H		H	V	M	M	M			V	P	V	-			H	H	V	V	V		H	M	M
3.4 Network target audience with specific interest	P	L	P	P	P	P		P	L	P	P	-	P	P		H	M	P	P	P			P	P	P	-			P	L	P	P	P		P	P	P
4. Financial resource requirements after 1985	-	-	M	-	-	M		H	H	M	M	-	-	-		-	M	M	H	H			M	-	M	M			M	M	-	M	P		P	H	H
5. Feasibility of implementation																																					
October 1984 – December 1985	*	*	I	*	*	D		*	*	*	*	*	*	*	-	*	I	D	D	D			*	*	D	-			-	D	D	F	D		F	F	F
January 1985 – December 1986	*	*	F	*	*	F		*	*	*	*	*	*	*	-	*	H	H	H	H			*	*	H	-			-	D	H	H	H		H	H	H
January 1987 – December 1987	*	*	H	*	*	F		*	*	*	*	*	*	*	-	*	H	H	H	H			*	*	H	-			-	D	H	H	H		H	H	H
6. Priority of implementation																																					
October 1984 – December 1985	*	*	(1)	*	*	(2)		*	*	*	*	*	*	(3)	(4)	*	L	(5)	(6)	L			*	*	(7)	H			-	L	L	(8)	(9)		(10)	(11)	(12)
January 1986 – December 1986	*	*		*	*			*	*	*	*	*	*	H	-	*	H	H	M	M			*	*	H	H			-	L	H	H	H		H	H	H
January 1987 – December 1987	*	*		*	*			*	*	*	*	*	*	H	-	*	H	H	H	H			*	*	H	H			-	L	H	H	H		H	H	H

KEYS
- : Not applicable
* : Already a routine activity
L : Low workload or priority
M : Moderate workload or priority
H : High workload or priority
V : Very high workload or priority
P : Possibly L, M, H or V
I : Infeasible
F : Feasible
E : Highly feasible
D : Feasibility depends on emphasis

(1) to work on a technical monograph on drinking water quality surveillance
(2) to support the on-going activity of the UPM library on the compilation of Malaysian environmental literature
(3) to extract useful information from small-circulation newsletters, etc., for specific target audience
(4) to photo reproduce literature collection of PEPAS general interest upon consent
(5) to put out information sheets for the three pilot projects
(6) same as (1) above
(7) to concentrate on appropriate technology subjects related to water supply and sanitation
(8) to carry out surveys on a few topics of interest through existing contacts
(9) PEPAS to conduct its own surveys on a few topics
(10) to compile national codes of practice on toxic and hazardous waste management
(11) to acquire useful training visual aid kits on water supply and sanitation subjects of interest
(12) to acquire general purpose softwares

TABLE 4 - ASSESSMENT OF ADDITIONAL WORKLOAD ON CENTRAL INFORMATION
PROCESSING ACTIVITIES

	SUBJECTS	A. PEPAS			B. REFMAT			C. CONSOL			D. CONTAC			E. SURVEY			F. SUPPORT			TOTAL		
	PHASES / TITLE	1985 I	1986 II	1987 III	1985 I	1986 II	1987 III	1985 I	1986 II	1987 III	1985 I	1986 II	1987 III	1985 I	1986 II	1987 III	1985 I	1986 II	1987 III	1985 I	1986 II	1987 III
PEPAS WORKLOAD	ESE	*	*	*	-	-	-	L'	M	M	-	-	-	L'	M	M	L	L	L	0.75	2.5	2.5
	SA	*	*	*	*	*	*	L'	M	M	*	*	*	L'	M	M	L	L	L	0.75	3.0	5.5
	IPO	-	L	L	-	M	M	-	M	H	-	L	L	-	M	H	-	M	M	-	5.0	5.5
	IA	-	L	L	-	M	M	-	M	H	-	L	L	-	M	H	-	M	M	-	5.0	5.5
	Staff	*	*	*	-	-	-	-	M	M	-	-	-	-	M	M	L	L	L	-	2.5	2.5
	Sec.	*	*	*	*	*	*	L'	M	M	*	*	*	L'	M	M	-	-	-	0.75	2.0	2.0
INVOLVEMENT OF PEPAS CONTACTS	UPM	-	-	-	C	C	C	-	S	S	C	C	C	S	S	S	C	C	C	C	S	S
	MAL/M	-	-	-	-	-	-	-	C	C	-	-	-	-	C	C	-	C	C	C	C	C
	MAL/D	-	-	-	-	-	-	-	C	C	-	C	C	-	C	C	-	C	C	C	C	C
	MAL/P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	C	C	C	C
	REG/W	-	-	-	-	-	-	-	S	S	-	C	C	-	C	C	-	C	C	-	C	C
	REG/C	-	-	-	-	-	-	-	-	-	-	C	C	-	C	C	-	C	C	-	C	C
	REG/O	-	-	-	-	-	-	-	-	-	-	C	C	-	C	C	-	C	C	-	C	C

KEYS

-    Not applicable
*   Same as the current level of involvement
C   Only casual involvement
S   Significant involvement
L   Low (0.5 man-months) within the specified phase
L'   Low (0.25 man-months) within the specified phase
M   Moderate (1.0 man-months) within the specified phase
M   High (2.0 man-months) within the specified phase
UPM   Universiti pertanian Malaysia (University of Agriculture, Malaysia)

MAL/M   Division of Engineering Services, Ministry of Health, Malaysia
MAL/D   Department of Environment, Ministry of Science, Technology and Environment
MAL/P   Members of the Malaysian Environmental Health/professional circle
REG/W   WHO Environmental Health Staff
REG/C   Regional Information Centres
REG/O   Offices of the International Organizations in the Region

capabilities. While it was more due to PEPAS having played down information service and information management activities than the lack of interest on either part that relatively little has been accomplished by way of collaborative activities, there are two separate collaborative undertakings which ought to be highlighted. The first undertaking is the compilation of a bibliography on ASEAN environmental literature jointly prepared by UPM and PEPAS on the occasion of the ASEAN Seminar on Environmental Education (1981) and the second is the currently on-going activity, the compilation of Malaysian literature on environmental science subjects, for which the PEPAS micro-computer as well as some of the available softwares have been utilized. With respect to this proposed FNP concept, the direct involvement of UPM in the operation of FNP activities may not be logistically feasible, except for one of UPM's special interest. However, it would be foolish if this resourceful institution was not fully taken advantage of in the formulation of a workplan particularly with respect to CIP activities.

Special attention is drawn to item 2 in the priority assessment matrix (see Table 4) in which suggested UPM support activities in CIP are listed with priority.

These activities include:

Very High Priority

D (4)   Collection and compilation of resource documents on subjects of special interest from already established contacts

High Priority

A (6)   Production of bibliographic and referral documentation on special collaborative activities

Moderate Priority

C (3)   preparation or contribution to the preparation of information sheets on subjects of current technical interst

C (4)   Preparation of or contribution to the preparation of technical monographs

C (5)   Preparation of or contribution to the preparation of technical guidelines

D (2)   Compilation of general information source lists and directories

E (4)   Compilation of regional surveys known to have been already
            conducted in the region

E (5)   Contribution to regional surveys to be conducted by PEPAS on
            subjects of mutual interest

F (3)   Collection and utilization of micro-computer softwares for use
            in training activities

Low Priority

B (4)   Compilation of important publications prepared by other UN
            agencies and NGO agencies on the subjects of mutual interest

B (6)   Compilation of loose documents (newsletter, communications,
            brochures, unofficial publications) on subjects of mutual
            interest

D (3)   Compilation of UN Water Decade-related directories and lists

While no firm workplan for collaboration has yet been made, several
formal and informal meetings have taken place this year (1984) including
meetings to discuss the UPM-PEPAS Collaboration Programme of Environmental
Information. A list of the background documents for the first meeting of
this undertaking is provided in Annex 4.5

General Distribution List

The informal products of CIP activities, while undertaken both in
connexion with FNI activities and independently will have to be
disseminated "widely but wisely". While the current basic distribution list
(Annex 6) gives a good foundation, the list has to be reorganized to allow
selective dissemination as well as to be expanded as FNI activities are
undertaken and the number of FNP participants increases. This experience
will have to be regularly undertaken in the course of FNP and CIP
activities.

5.   RESOURCE REQUIREMNETS

To carry out both FNP and CIP activities in a satisfactory manner
from the pilot project stage to full scale routine operational stage
additional resources will have to be mobilized also in stages.

Provided in Table 5 is an estimation of additional resource requirements based on a rather optimistic scenario. Particular attention is drawn to the following:

i. PEPAS Environmental Systems Engineer (ESE) will take the primary responsibility in undertakng both FNP and CIP activities for the first two years. In particular, he will carry out the pilot projects and make a thorough appraisal of the concept of FNP with financial resources made available from POETRI (See Annex 7-A for details). He will then graudally relinquish the responsibility to the Information Programme Officer (IPO) to be newly recruited and to PEPAS Special Assistant (SA) who is currently looking after PEPAS information files and document holdings.

ii. PEPAS Special Assistant (SA) will be also quite heavily involved in FNP and CIP activities until such time as I̶F̶O P can perform routine information service and information management activities. SA will then have to be involved more in the training resource documents area.

SA, having been involved in a variety of administrative as well as technical supporting activities, will be well prepared to assist in the routine operational aspects of the training courses held at PEPAS once the programme is adequately developed. She will need special short-term training herself to learn training techniques and methodologies.

iii. A PEPAS Information Programme Officer (IFO) (IPO) must be recruited as an additional PEPAS staff member (at the latest in the second year of operation (1986) of the information programme) either internationally or locally. Some basic training in library and information science is preferable but a fair exposure to the EH subjects is the primary requirement. The writer believes that the current temporary arrangement of SA looking after library catalogues and assisting in the preparation of technical documents will have to be discontinued at an appropriate time in the future so IFO can be fully engaged in FNP and CIP programmes and to allow meaningful utilization of SA's

Table 5   Estimation of PEPAS Information Programme Development Cost
Based on an Optimistic Scenario

Scenario	January - December 1985	January - December 1986	January - December 1987
1. Manpower Situation			
Existing Staff — ESE	- full time involvement	- heavy involvement in document consolidation and information service activities	- advisory involvement
SA	- leave from Oct.84 to Feb.85(a temporary replacement needed) - to attend a short course in effective methods for operating training courses	- same as above - training resource development activities	- document consolidation activities - training resource development activities
other staff	- casual involvement (some change over also expected)	- document consolidation in areas of speciality	- document consolidation in areas of speciality
Staff Addition and Cost	- recruitment of a temporary technical assistant to help implement three pilot projects (POETRI funds)	- recruitment of a documentation specialist to assist SA (information programme officer = IFO)	- recruitment of a secretary to assist SA and IFO
2. Central Information Processing(CIP) Activities	- those specifically related to pilot projects - see priority assessment matrix (Table 3)	- as many H activities in the priority assessment matrix (Table 3)	- as many H activities in the priority assessment matrix (Table 3)
Incurred Cost	- to expend a portion of PEPAS information budget for information collection activities	- STC to be recruited to work on a few selected document consolidation activities based on PEPAS collection	- STC to be recruited to work on a few selected document consolidation activities based on PEPAS collection
3. Information Programme Support Operations	- acquisition, compilation and bibliographic filing of general reference materials - reproduction, mailing, and record keeping of PEPAS-produced documents to those listed under the general distribution list - other routine information dissemination service activities		
Cost Estimation	- upgrading of micro-computer capability to accomodate documentation referral files ($3000.00) - acquisition of documentation softwares ($1500.00)	- acquisition of drafting equipment ($3000.00) - acquisition of micro-fiche reproduction equipment ($2000.00)	- purchase of a second micro-computer ($20,000.00)
4. Focalized Network Programme(FNP) Activities	- three pilot projects	- up to several focalized network service activities shown in workload assessment table	- revise network subjects and network structure to accommodate more current government interests
Cost Estimation	- up to approximately $2000.00 to be used to provide support services - cost estimation formula to be established based on pilot project results	- up to $2000.00 for facilitating each network - a total approximated as $8000.00	- up to $2000.00 for each - a total approximated as $10,000.00

technical background and past exposure to other PEPAS operations including her involvement in training programmes. The acquisition of IFO, therefore is almost a prerequisite to the successful implementation of the PEPAS information programme (See Annex 7-B).

iv. The recruitment of an additional secretary at an appropriate time totally dedicated to the work of informational programme is also necessary as it is expected that a great deal of bibliographic and correspondence data-base development activities will be undertaken utilizing the PEPAS micro-computer for FNP and CIP activities. In fact, the recruitment of this secretary may precede the recruitment of IFO as the current secretarial staffing level will be barely adequate to operate an information programme of only marginal scale and yet a substantial workload is expected of the operation of the three pilot projects to be undertaken in 1985 (See Annex 7-B).

v. As stated earlier, it is proposed that the provisional allocation of POETRI funds (Dfl 20,000) be utilized for implementing the three pilot projects described earlier in the text and in Annex 3 (See Annex 5 - Part A). The funds could be used to recruit a temporary assistant at least for several months. This arrangement will enable the information programme to get a head-start while waiting for the provision of funds to recruit a new secretary to replace the temporary assistant (or for extending the contract of the temporary assistant provided a new source of funding is made available).

vi. Other projected financial resource requirements are specified in Table 3 in a preliminary fashion. The actual financial plan will greatly depend on the first year (1985) of operation of the information programme following the proposed course of action outlined in this document.

vii. When the pilot project phase is completed or nearing completion and PEPAS has gained substantial experience in the implementation of FNP activities, technical visits should be made to key government agencies and institutions which by then have already shown keen

interest in or could be potentially quite interested in the FNP activities. Because FNP activities could be operated in a manner most beneficial to these particpating agencies and individuals and because FNP activities should be operated most efficiently only when personal contacts are firmly established, it is of great importance to make this technical visit to exchange views on the scope and scale of such an information programme operated by PEPAS and its implications to the overall PEPAS technical collaboration programme with the governments. The proposal for undertaking such visits is provided in Annex 7-C. It is also advisable that when the opportunity arises the REPIDISCA operations be also studied by a PEPAS staff member CEPIS especially with respect to the actual mechanisation of networking of other regional institutions in the WHO American Region.

6. OTHER ISSUES AND OBSERVATIONS

There are a number of issues, potential problems and constraints that have to be addressed to be sorted out or overcome for the FNP concept to be properly operationalized for its potential viability as a sustainable PEPAS activity to be properly assessed. Some of those having particular importance are presented below.

(i) Lines of communication

The lines of communciation between PEPAS and the target audience ought to be properly defined. In the case of routine technical transactions direct communication between the PEPAS information system and the target individuals and agencies should be maintained without unnecessary intermediate review or clearance. All transactions, however, could be routinely copied to appropriate units within the organization. The communications having official significance will, as is normally the case, be subject to official clearance and should be sent through the official channels of communication.

(ii) <u>PEPAS information sheets, updates, newlsetter etc.</u>

Publication of a regular PEPAS Information Bulletin for the general target audience should be officially approved.

(iii) <u>Information network of EH units of the Ministries of Health in the Western Pacific Region</u>

It is premature for PEPAS to consider functioning as a centre to facilitate regular exchanges and transfer of information among the EH units of the Ministries of Health in the region, or to consider functioning as a centre to coordinate information exchange among the various information service systems and functions in the Region, although such a concept may be quite an attractive one. It takes a great deal of institutional strength and financial commitment as well as establishment of a formidable information base. This is unlikely for PEPAS for quite sometime, if it is ever to be the case. The FNP should be regarded as an attempt to make a system which will function to facilitate information exchange and transfer on a limited scale. In this respect it is not even reasonable to make any sort of reference to REPIDISCA or any other systems which have been established and operate under totally different circumstances and with much different system design philosophy. For that matter, it makes no sense for PEPAS to be a CEPIS in the WP Region. The institutional orientation and the circumstances surrounding the establishment of the two centres are very different.

(iv) <u>Cost recovery</u>

While PEPAS' main target audience consists of the officials of the national government agencies in the WP Region for whom informational outputs may be provided free of charge, a significant number of requests for such output are received from outside the main target audience, making it necessary to take into account the cost recovery problems. A systematic and regular production of information outputs in quantity will incur substantial reproduction costs. This is quite likely to happen as the FNP could be most productive if individuals from academic as well as non-governmental and semi-government organizations (consulting firms,

associations, non-profit research and training facilities) participate as additional information sources. The cost recovery considerations include the establishment of a publications and charging policy, collection methods, the currency of payment, handling charges by banks, etc. Similarly PEPAS has to have budgetary provisions for expanding its information base on grey literature. Under many circumstances the collection of unpublished documents gets hampered when the organizations producing such materials request payment while PEPAS expects to receive them for free.

(v) WHO policy on engaging institutions and individuals in the provision of short-term intermittent service to PEPAS

The central information processing (CIP) activities at PEPAS will require intermittent short-term engagement of professional outside WHO, particularly from the academic and professional circles in Malaysia. Without such involvement of local professionals PEPAS would be limited in its capability to perform the CIP activities, and the local institutions would consider PEPAS as a totally isolated institution even when the subject areas are of common interest. PEPAS has been fortunate to have maintained some informal links with Universiti Pertanian Malaysia (UPM), University of Malaya (UM) and others through interaction on a personal or semi-official basis.

Possibilities will have to be explored to enter into task-oriented contract service engagement on a project by project basis without having to go through lengthy procedures such as applications for WHO Research Funds. The current provisions for short-term consultants and temporary advisers are not satisfactory when the nature of service is intermittent and it is to be performed without being physically attached to WHO.

(vi) Operations room

PEPAS is considering undertaking FNP activities by making use of a specially arranged operations room located in the PEPAS building. Preparations for its arrangement are currently underway.

PEPAS Information System

Concept Development

- a K-J Diagramme -

Notes: 1. The numerals in the K-J diagramme* correspond to the K-J
statements attached to the diagramme.
2. The N-M diagrammes** based on which the K-J statements were
prepared are not included in this Annex.

    * K-J diagramme: See a brief description attached.
   ** N-M diagramme: After Masakazu Nakayama. Reference available
in Japanese only from M. Nakamura.
3. The notations P, U, and G associated with each statement
indicate the following;

        P: the statement primarily relates to PFPAS operations
        U: the statement primarily relates to UPM operations
        G: the statement primarily relates to general operations

About the K–J Method

The K–J method, a kind of brain-storming method for information synthesis and decision-making, was invented by Dr. Jiro Kawakita, Professor, Tsukuba University, Japan. Dr. Kawakita is a renowned anthropologist with a wealth of experience in anthropological field studies in South-East and North-East Asia, particularly in Nepal.

The K–J method was first introduced by Dr. Kawakita in 1963 in a book entitled, Hassoho (in Japanese), or a method for creative thinking. The book immediately became a best-seller and, after almost two decades, it is considered to be one of the classical books on creative thinking.

Dr. Kawakita wrote another book on the same subject entitled, Zoku Hassoho, or a method for creative thinking — II, in which he elaborated in detail how the K–J method works. The method has, since its first introduction, received wide acceptance both by public and private sector planners, engineers, administrators, etc., who are faced daily with the problems of synthesis of vast amounts of information and of rational decision-making.

The method is now applied to numerous projects in Japan in the field of education, private sector business activities such as marketing and invention of new products, public sector activities such as administrative management, research and development.

Outline of Introductory K–J Method

1. Allow free-wheeling, but controlled discussion.
2. Prepare cards with a descriptive statement.
    (One-liner but inspirational statement better. Put a sequential identification number on each card. If collected over a period of time, put date, place, source and name of preparer)
3. Exhaust all pertinent issues.
4. Proceed to grouping of cards.
    (Should mix them up to avoid prejudicial grouping. Need a large table or a floor space.)
5. Use your sense, feeling, inspiration,. . . ., to identify groups. (Don't force lone wolves to belong to groups. Don't be misled by the wording.)
6. When more than five cards are gathered, give a descriptor to the group.
    (These primary groups are called "district piles" in the paper prepared by Nakamura, et.al. Use a different color for descriptor cards)
7. Proceed to identify secondary groups, or "state piles", looking at the district pile descriptors.
8. Continue the process until no more group agglomeration is possible.
9. Construct a K–J diagram based on the result of the grouping exercise.
10. Review the completed diagram. Resolve any differences in opinion. Revise the diagram if necessary.
11. Identify the most significant "state" pile, or highest order agglomeration of cards.
    (You can vote to reach a concensus)
12. Continue the same process until you reach a specific card or group of cards considered most important by the participants.
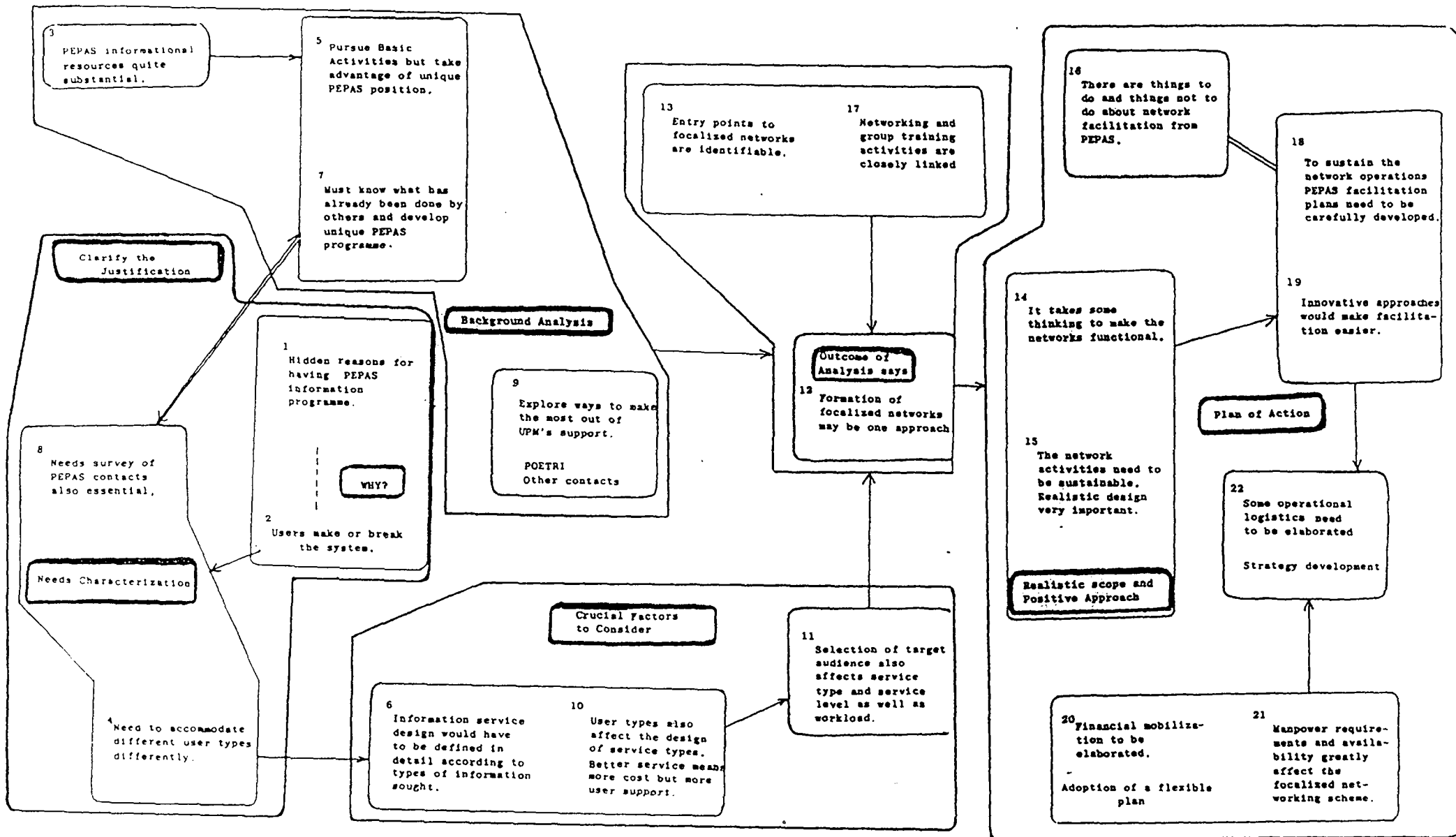
3 PEPAS informational resources quite substantial.

5 Pursue Basic Activities but take advantage of unique PEPAS position.

7 Must know what has already been done by others and develop unique PEPAS programme.

Clarify the Justification

Background Analysis

1 Hidden reasons for having PEPAS information programme.

WHY?

8 Needs survey of PEPAS contacts also essential.

2 Users make or break the system.

Needs Characterization

Need to accommodate different user types differently.

9 Explore ways to make the most out of UPM's support.

POETRI
Other contacts

13 Entry points to focalized networks are identifiable.

17 Networking and group training activities are closely linked

Outcome of Analysis says

12 Formation of focalized networks may be one approach

16 There are things to do and things not to do about network facilitation from PEPAS.

18 To sustain the network operations PEPAS facilitation plans need to be carefully developed.

14 It takes some thinking to make the networks functional.

19 Innovative approaches would make facilitation easier.

15 The network activities need to be sustainable. Realistic design very important.

Plan of Action

22 Some operational logistics need to be elaborated

Strategy development

Realistic scope and Positive Approach

Crucial Factors to Consider

11 Selection of target audience also affects service type and service level as well as workload.

6 Information service design would have to be defined in detail according to types of information sought.

10 User types also affect the design of service types. Better service means more cost but more user support.

20 Financial mobilization to be elaborated.

Adoption of a flexible plan

21 Manpower requirements and availability greatly affect the focalized networking scheme.

Figure A1-1   Development of a Conceptual Framework

PEPAS Information System and Its Component Programmes

-37-

1. Aside from conventional reasons, what prompts an institution like PEPAS to want to institute an information system?

1-a

G

Most international organizations operate their information systems partially because of their <u>institutional propaganda</u>. There is a great deal of institutional ego in the subject coverage and in the making of the sphere of influence.

1-b

G

Just like individuals, an institution builds up its insight by being sufficiently exposed to individual facts and data. But the institution as a whole has to digest the facts and data to the extent of being able to put them together in a variety of ways before <u>the institutional insights</u> could be developed. It is what PEPAS should aim at by developing its information system, and it is what is meant by "multidisciplinary-ness".

2. There ought to be some unique features in the PEPAS information system. It has to be very sensitive to the user needs which are dynamically /what is changing and are much different from/many of the existing systems. In provided by particular, information dissemination is synonymous with information dissipation unless certain provisions are made.

2-a

P

By <u>constantly being in touch with the reality</u> of the member states PEPAS operations could be more relevant in meeting the true needs of the governments. The programme development would become <u>more in tune with the real needs and less ad hoc</u>. It won't be possible to run out of ideas on good activities.

2-b

P

<u>PEPAS operates, in prinple, at the the request of the member states</u>

- therefore the information service ought to be looked at as an activity requiring significant feed-back inputs

- it is not PEPAS which assists member states but the member states helping themselves through PEPAS

3. While simple dissemination would not be sufficient, even that dissemination
    has not been rigorously and systematically carried out. The PEPAS internal
    informational resources are already quite substantial.

    3-a   P

                       Exiting PEPAS information base is
                       quite substantial

                       - the operational information base and
                         routine managerial information system
                         are both very good. They have been
                         refined over several years.

                       - little has been done for information
                         referral service outside PEPAS though
                         the basic system requirements appear
                         to be already existing

    3-b   P

                       Thorough review of past PEPAS activities
                       and informational outputs

                       - this is the very first activity to
                         be carried out

                       - dissemination of these informational
                         product could be carried out in
                         connection with network development

    3-c   P/U

                       Dissemination materials

                       - those already available at PEPAS
                             reports
                             documents
                             notes
                             UPM collaboration documents
                             MOH collaboration documents

                       - do we have the list available?

    3-d   P

                       Existing personal information
                       resources at PEPAS

                       - a great deal of information resources
                         appear to be with existing professional
                         staff which will have to be tapped

to which users of common interest subscribe on their own initiative.
4. The PEPAS information system is not a commercial operation. Therefore, it has to deal with much greater variety of information user types. This makes the design of an information system quite complicated.

4-a   G

Information User Types

- he who doesn't know what information
  he wants..so he collects everything,
                  or he throw out everything,
                  or he realizes what he needs
                  when he was told.

4-b   G

Information User Types

- he   who believes he has everything
  he needs in his office confine, or
  helieves he would rather get by
  the situation by merely putting together
  what he knows or what he has in his
  office. He could't be bothered.

4-c   G

Information User Types

- he   who wants to know everything
  about everything not because he makes
  use of it but he gets satisfaction
  serving as a good source of information.
  He has little intention of putting the
  bits and pieces of what he has compiled
  into the form of useful information
  himself.

          G
4-d

Information User Types

- he   who knows precisely what he
  wants..so he tries to get exactly
                  that piece of information,
                  or he develops a good personal
                  information system geared
                  toward his needs (keeps the
                  system lean, compact and concise).

5. Regardless of the design of the PEPAS information system, some basic activities   have to be carried out. Although these activities are similar in nature to those carried out by other existing information systems, the outputs may be so designed to cater for specific needs of the target audience.

5-a   P/U   .

Dissemination activities of unique
    significance to the region

- those about which UPM has unique
  advantage
        Mrs. Ng's current project
        ASEAN literature follow-up
        others for which not only DES
            but other faculties and depart-
            ments could offer strength

- those about which PEPAS has unique
  advantage
                    MHLG
        Malaysian MOH and DOE projects of
            regional significance
        Korean air pollution related
            subjects
        Current Japanese information on
            subjects of interest
        Some   NEPC projects
        Chinese group training experiences
        EH field engineer insights
        POETRI materials
        WHO/HQ produced documents requiring
            facilitation

5-b

    P

Incentives for the audience to utilize
information service

collection, compilation of software
goods for distribution

- legislation
- training manuals
- survey reports

The difficulties lie in cost and labour
required for compilation. In   the
initial period just put together lists.

5-c

    P

. A great deal of information gets buried
in the bulkiness of typed documents

- uncovering the salient points of
  the bulky documents may be useful
  (digest service)

- evaluating a great deal of information
  to produce a summary or a review
  may be valued by the users

- these activities require volunteer
  support

6. The information users want to have different types of information on different occasions. The following categorization may suggest additional and different kinds of activities to be undertaken by PEPAS.

6-a

G

Information Types

Just what one was searching for:
- comes in the form of tips, suggestions, response to queries, accidental encounter in the informational media, etc. (Likely to be sought by he who conscientiously pays attention to what he wants to achieve.)

6-b

G

Information Types

Know-how guidelines, procedures, etc.

- created for specific purposes
- cater specific needs of specific user groups
- used in group training or exposure activities

6-c

G

Information Types

Baseline, background or basic information without which no intellectual activity could be initiated:

- comes from introduction to subjects in text book form, introductory training materials, educational materials, etc.

- may include baseline data, statistics, general guides

6-d

G

Information Types

Current awareness, broad coverage of subjects, widen one's perspective

- information provider likely to decide on the coverage rather arbitrarily
- could confine the scope within the interest and capability of the information provider.
- difficult to know how useful such activities are for the target audience.
- could be considered as part of the institutional propaganda (updates of its publications)

7. It is of course essential that we ensure best use is made of already
    produced informational guides so that we may become fully aware of the
    relative position of PEPAS in respect to other systems as well as to the
    outputs they have already produced.

<div style="margin-left: 2em;">

7-a   P/U

Taking advantage of what other systems have already done or are doing

- identify systems and possible modes of access

- implications have to be carefully studied prior to making use of their products

7-b   P

Regional information surveys

- surveys of environmental legislation, monitoring methods, rural water supply technology, etc., may be both practical and beneficial for the development of PEPAS information system

- but such activities have been and will continue to be carried out by other regional institutions and agencies

7-c   P/U

Get an overall picture of information networking attempts

- it appears everyone is interested in not duplicating information service activities and thus duplicating the survey of information service activities in the region

- by searching through PEPAS and UPM libraries some survey documentation could be identified

- Dr. Tan Bock Thian did something for IDRC

</div>

8. Even if we become fully aware of the relative position PEPAS is at, we also have to know the needs of the region before PEPAS could undertake meaningful information service activities.

    8-a

      P

National profile and needs assessment

- the current ad hoc national profile
  evaluation and needs assessment
  could well be integrated into the
  proposed network information system

- or the network design may well take
  into account the profile evaluation
  and needs assessment activities

- it appears all of the basic ingredients
  are there in the PEPAS operation
  except they are in disarray

    8-b   P

Information exchange and transfer for the Decade in WPRO

- WPRO documents appear to have
  some emphasis on this

- Ed.Lee seems to have done some
  by being the regional advisor
  to cator for the needs of the
  country engineers

- need to sort out logistic questions
  regarding the role of PEPAS and
  WPRO since some information reaches
  WPRO/EH but not PEPAS

9. Particular attention has to be paid to the differences in orientation, the role and the functions of PEPAS and those of UPM.

      P/U

PEPAS and UPM

- PEPAS target audience is government
  UPM target audience is academic

- PEPAS system must reach out to
  communicate with the audience while
  UPM system could count on the audience
  to reach out to the system due to
  the nature of academism

10. Further, the kinds of service to information users will have to be designed differently. Otherwise the value of information gets lost or diluted and that will pose detrimental effects to long-term operations of PEPAS.

10-a   P

Multi-tier design of information service (levels of personal interest)

Level 1. those who are personally attached to and acquainted with PEPAS and its staff (possible promotors)

Level 2. those who pay personal interest to the technical aspects of PEPAS operations (potential and largely unexploited target audience)

Level 3. those who are casually curious to know what PEPAS is

Level 4. those who take interest in the technical content of PEPAS outputs (possibly become Level 2 audience)

10-b   P/U

Multi-tier design of information service

Because the nature of the target audience varies according to its respective positions, background, immediate interest, long-term interest, etc., shouldn't the informational products to be delivered also differ? Uniform products to all will result in little positive feedback. Trade-off between cost(labor) and system effectiveness.

10-c   P

Dissemination of PEPAS informational products

- Derestricted PEPAS reports should be sent out to those who may value them

- Distribution mailing lists

   category classification neccessary as the current mailing lists rather arbitrarily prepared

- dissemination targets should include such agencies as ADB, WB, AID, JICA, IDRC, EEC, UNICEF, various national health and environmental research institutions, journal publishers

- also include various professional associations as they view PEPAS network as possible target audience of their own

11. In addition, we should carefully select target audience, by carefully noting the possible motivations for them to be associated with PEPAS informational products

        11-a   P

<u>Target audience</u>

<u>Motivations</u>

- information seekers seek information according to their own motivation
- in some cases they are not sure of their motivation to collect information particularly if given free of charge
- how much **effort he** exerts to get information is a measure of his interest and motivation
- if the motivations and the degree of interest are not known, the system survives only by self-justification

        11-b

<u>Those who want to know what is cooking in PEPAS</u>

- he needs to assess his relative position with respect to overall PEPAS programmes

- he wants to know what others are doing with PEPAS

- he wants to get ideas on programme development and project possibilities

(high ranking government administrators, UN and NG organizations)

- one important target audience (though most likely uninterested at the outset) would be non-EH staff of WHO, particularly those who work in the field related to water- related medical activities

        11-c

<u>Those who want to have information uniquely obtained by PEPAS</u>

- so that activities similar to that described could be undertaken in collaboration with PEPAS(govt.)
- so that the information could be integrated into their own information base to serve others(inf. systems)
- so that certain information may be usefully integrated in their own technical work(other technical agencies)

        11-d

<u>Network linkage possibilities viewed from the point of increasing facilitation</u>

There could possibly be a great mass of hitherto untapped target audience who would value PEPAS information service because they have no direct entry points to PEPAS contacts:

- consultants
- academic institutions
- news media
- publication houses
- foundations
- associations.etc.

12. The target audience may be grouped in some logically and logistically meaningful way. Such groupings may be called focalized networks.

12-a   P/U

Initial trial period

Prior to establishing network configurations and to closing in on the sharply defined target audience, ᵃwell prepared sequence of preliminary contacts **is essential**

- prepare the first few batches of correspondence well in advance
- should not have too high an expectation
- make sure that the initial curiousity is sustained.

12-b   P/U

Spontineity in the growth, expansion, or reshaping of the networks

- at the outset, potential participants should be aware of the formation of networks to which they might belong (initial survey for that purpose)

- reshaping of the network configuration will have to be determined also by occasional follow-up surveys

12-c   G

Spontineity will require seed activities

- identification of networks which are likely to be successful requires identification of already on-going activities and the associated pseudo-networks (ferro-cement, test-kits, solar energy, etc.)

- unless the spontineity condition is ripe, facilitation should not be attempted as it is likely to fail.

G

12-d

Spontineity will require the threshold level of internal momentum of the contributing factors

- there has to be a certain amount of external or internal pressure (i.e., funded projects, duties, mandates)

- the subjects about which the network may be formed should be sufficiently current, fresh and exciting

13. In developing focalized networks certain seed activities need to be identified. Naturally many of them are those which PEPAS has an easy entry point into.

13-a   P

Relationship between the regional
networking and national networking

- certain key activities at the national
  level already give the appearance of
  networking of interest to PEPAS, i.e.,
  toxic substance control in Philippines
  and drinking water surveillance in
  Malaysia

- these activities, although national
  in nature and in operational respon-
  sibility, should be regarded as
  possible catalytic PEPAS-involvement
  activities
                           shall be made
- therefore, a review/of all of the
  on-going and future activities at
  the national level from which PEPAS
  could get substantial benefits by
  sustained involvement

13-b
          P/U

Attractive Malaysian network subjects

- MOH activities
    * National DW surveillance network
    * National solid waste management
    * Water quality monitoring(DOE)
    * Air quality monitoring(DOE)
    * Rural water supply

- Institute of public health

- Association of public health inspectors

13-c   P/U

One-day forum on environmental
information systems in Malaysia

- the status of information systems
  in Malaysia has not been thoroughly
  studied yet.

- one day forum could be organized
  after a thorough study by UPM and
  PEPAS

- the proposed networking concept
  may be applied for developing an
  information system network on the
  environment in Malaysia

14. Once focalized networks are identified, then the networks will have to be facilitated to promote free flow of information, noting the prerequisite conditions for the network participants to react positively.

14-a

P/U(G)

Incentives for the audience to utilize information service

The service should produce added dividends:
- forum of communication with others whom one cannot reach alone
- information (software) exchange
- goods (hardware) exchange
- one's waste may be an other's resource

14-b

P

Incentives for the audience to utilize information service

The information service would be deemed more relevant and beneficial if linked with possible delivery of additional goods (seminar, workshop, STC, etc., in the case of PEPAS), meaning the whole programme development could be linked with information service(including technical visits).

14-c

G

What makes one want information?

- one wants information for simple intellectural stimulation. Thus onemay prefer not being constantly being immersed into the information pool of professional interest. (one would seek information in a variety of ways other than being in touch with the sphere of professional interest.)

- one wants information for the sake of being prepared for the occasion on which it may serve a useful purpose (a great deal of our usual exposure to information applies here).

- one wants information because one is under pressure to have to respond to a certain situation about which one has no information

14-d

P/U(G)

Incentives for the audience to utilise an information service

Without feeling burdened, the target audience ought to feed back its inputs

15. The number of focalized networks and the workload associated with them have to be carefully planned taking into account the existing PEPAS resource constraints.

15-a

P

Operation of the Network

- the number of networks (and network participants), the number of transactions, and the quantity of information transfer, etc., depend a great deal on resource constraints and the projected workload

- the estimation of workload has to be realistic and the workplan has to be properly phased

15-b

P

Operation of network to sustain activity

Network participants may take turns to engage in activities which may satisfy their incentive to continue being in the network (allows dissemination to their desired targets through PEPAS designed network)

15-c

P/U

Need to define the kind of referral service the system could always provide

- do only the service which could be sustained

- has to establish charging scheme to discourage abuse

- service ought to be provided promptly meaning referral sources have to be within reach of the system

16. There are certain things you should do and certain other things you should not do with respect to interacting with focalized networks.

16-a   G

<u>Strategies to be adopted to enhance</u>
<u>positive response from the networks</u>

- present positive statistics regularly

- regularly programme follow-ups

- inform   of the benefits accrued
  to other members

P

16-b

<u>Query -response service could be</u>
<u>undertaken in modified fashions</u>

- pre-prepared questions and response
  (AAM insurance brochures, WPCF
   trouble shooting columns in HIGH-
   LIGHT)

- could prepare clues for requesting
  referral services

- follow a particular pilot project
  to produce queries in a logical
  sequence

16-c   P

It will not be wise to offer request
handling (referral) service to all the
target audience since it may be
difficult <u>to meet the user expectation</u>
<u>all the time.</u>

P/U

The amount of <u>request handling (referral)</u>
<u>service</u> is most likely to be quite
limited particularly if the information
users are located toward the <u>outer</u>
16-d   <u>fringe of the sphere of influence.</u>

17. Any group training activities could be considered as potential seed activities for the formulation of focalized networks.

17-a

P

Networking based on seminars and workshops

- past PEPAS seminars and workshops may well constitute potentially workable network configurations

- future seminars and workshops ought to be considered as subjects of new network or of additions to the already existing network configurations

17-b

P

Networking and seminars/workshops

- all seminars and workshops in which PEPAS involvement is substantial should be considered potential networking subjects

18. Once a network is formed, then it takes a great deal of effort to sustain the communication within the network and between PEPAS and the network.

P

18-a

<u>Network focal points</u>

- some networks have no focal points

- others may have minor focal points

- if network focal point activities incur cost, the focal points may not be willing to pay unless the benefit far exceeds cost

G

18-b

<u>Ideally the network participants trigger spontaneous dendritic chain reactions</u>

- participants having no <u>lower echelon information flow structure</u> may well be counted off as effective participants

- a well-lubricated network may function through network focal points but the channels of communication among the participants have to be well established

P

18-c

<u>Interactions among the network participants</u>

- unless the participants are within easy communication reach, little interaction could be expected

- there could be hardly any communication to PEPAS unless communication to it becomes the prerequisite to receiving the benefit which is worth its toil (considered)

- PEPAS should expect only to serve the networks wherein either direct communication with all the participants or the network focal point(s) is(are) going to be fully functional

18-d   P/U

<u>Attempt to sustain the network configuration once established</u>

- the network facilitator must attempt to foster a sense of belonging among the network participants

- the network participants will have to become familiar with other participants (create atmosphere of mutual respect by facilitating introduction of the profile of participants).

19. PEPAS facilitation would have to be innovative to sustain the focalized network operations.

19-a

P/U

Making it easy for information providers to respond

- to show the sample goods one may receive in return
- to design standard format if desirable
- to develop an inventory system which could eventually be installed into CANOBRAIN

19-b

G

Making it easy to **respond** or to feed back

- make use of already existing channels (or vehicle) of communication: national drinking water surveillance, etc.

- send along with attractive goods to entice response (survey reports, etc.)

- use well prepared forms

19-c

P/U

Systematic and speedy facilitation by making use of computer softwares

- development of various recording files essential

- development of facilitation programme software may become a neccessity

19-d

P

Keeping track of progress by recording the number of transactions

Arouse the sense of participation and contribution by presenting participatory statistics

20. Provisions have to be made for the financial resource mobilization.

    20-a   P/U

                   Financial resource planning

- hardware components
  * establishment of an operationsroom
  * support facilities including upgrading
    of computer equipment and softwares

- overhead costs

  * communications
  * supporting staff

- see POETRI guidelines

    20-b   P/U

                   Cost recovery and the implication of
                   free information service

- certain target audience could possibly
  be interested in paying for the
  service the system may wish to offer

- there has to be some awareness on the
  part of the information receiver of
  the cost of information delivery

- there may be various ways to charge
  cost to the users without them feeling
  they value the service only if it were
  free

21. Manpower resource planning requiresrather careful planning and unconventional interim measures.

21-a P

Manpower resources to be provided must come from the local source

- at the outset employment could be temporary

- the skill to deal with information ought to be acquired while working on the system

- could well be sub-professional or even secretarial

21-b

- MOH has to get sufficient benefits from the information system **before it will ever support additional staff cost.**

P/U

This may well be a good research topic for student(s) participation

- explore through UPM departments (even outside DES) for potential student involvement

P/U
Resource mobilization strategies

21-c

- Japanese interests should not be ignored. No active participation does not mean no interest. Some catalytic interactions may trigger resource mobilization and information may in fact may be the catalyst

- Make sure to capitalize on the Decade News article
- the new Decade foundation(more information required)

P

Professional manpower requirements

21-d

- as the information activities intensify the operation of PEPAS information system will surely requireafull time information specialist

- PEPAS will have to develop a pool of volunteer manpower resources to be fully operational

- the system will have to be heavily .computer supported

22. Development of operational routines would take time and a trial and error
approach. Some thoughts on this include the following:

22-a   P

Networking and facilitation routines

- it will probably become extremely
tedious to continue facilitating
various networks without some
well designed system for routine
service provisions

- computer software development thus
may become quite important

22-b   G

Presentation of subjects has to be
monitored in the progress monitor
chart

- systematic code and good monitoring
chart have to be developed

- the chart ought to be kept in the
operations room on display

22-3   P/U

Attention can be best received through
visually appealing presentations

- informational outputs ought to
contain visual presentations

- drawing kits will be required

- photographs..B/W camera

22-4   P

Development of visual instructional
resources

- collection and compilation of
colourslides should be integrated
as an important aim of networking

- this is one of the important lihks
between the information service
and training activities

- appeal to network contacts to provide
slides

22-5   P

Making this project appealing

- Newsletter...Chandler's UNDP pamphlet
could be an example for this project
as well as for PEPAS circular

The Focalized Network
Information Service Programme

THE FOCALIZED NETWORK
INFORMATION SERVICE PROGRAMME

The Focalized Network Information Service Programme (FNP) is an
information programme in which the information exchange and transfer take
place primarily between the network participants and the network
facilitator (PEPAS) for the purpose of solidifying the information base
and refining the quality of information through regular correspondence.
The network, of course, could serve as a channel of communication for
query-response and other ordinary information dissemination activities,
but these are not meant to be the primary objective of the networking
exercise. The participating members of the focalized network therefore
are by necessity active participants in the network operations and may
constitute a very small segement of the entire target audience of the
information system, and the network configuration consisting of a
selection of members from the entire target audience differ according to
the subject that the network is intended to deal with. A number of
different networks may be formed from the same set of target audience each
dealing with specific subject for a specific duration and striving towards
producing some desired final informational outputs.

Figure A2-1 shows an illustrative example depicting two focalized
networks formed with different participating members selected from the
same general target audience consisting of institutions and individuals
having vested interest in one or more of the three subjects. Note that
there are many elements of the target audience which are left out of the
network exercise either because they are passive information users or the
elements have not yet been identified as potential network members.

The size of the focalized network may grow or shrink as time
elapses. The newer members may be included while the inactive members may
drop out of the active network activities. The size of the general target
audience is also likely to change over time. This situation is

illustrated in Figure A2-2. Note that the facilitating institution
(PEPAS) has its official information dissemination (report distribution)
contacts, whose number is generally constant over time.

The general procedure for the development and implementation of FNP
involves some ten steps described in Figure A2-3. Note that the Central
Information Processing (CIP) activities will have to be undertaken to
consolidate informational materials generated within the facilitating
centre (PEPAS) or obtained from other information sources to support FNP
activities.

The FNP concept differs from the ordinary concept of networking
institutions and information systems primarily for the following reasons:

(i)   FNP is not meant to be the linkage mechanism of institutions. If
        such a linkage mechanism exists, the relevancy of FNP activities
        may be enhanced, but FNP should not be unnecessarily hampered
        without it. This is because the FNP activities are undertaken on a
        particular subject among the network participants whose inclusion
        in the network is only for the duration of the network activity.

(ii)   FNP aims at producing a specific informational output and the
        participants are made to have some sense of purpose and achievement
        rather than to be passive information receivers.

(iii)   FNP is meant to be an added dimension to the conventional notion of
        information service activities, and therefore there is no conflict
        of interest or conceptual disagreement with any other notion of
        network information service activities. The more other general
        information service activities provide support to the FNP members
        the more meaningful it would be for FNP itself.

Information Dissemination Activities by the
General Information Sources

    Journals Newsletters Books Reports etc.

    International and National Information

    System Products

PEPAS Focalized Network Information Service
Programme (FNP)

    Background Informational Materials

    Compilation of Interim FNP Outputs

    Supporting Informational Resources

⬡ PEPAS

◯ National and Regional Centres
of Information

Untargetted audience:

◯ Subject A

☐ Subject B

△ Subject C

Targetted audience:

● Subject A

■ Subject B

▲ Subject C
(not included)

Figure A2-1   The Relationship Between the General Information Sources, FNP(PEPAS), and the Target Audience
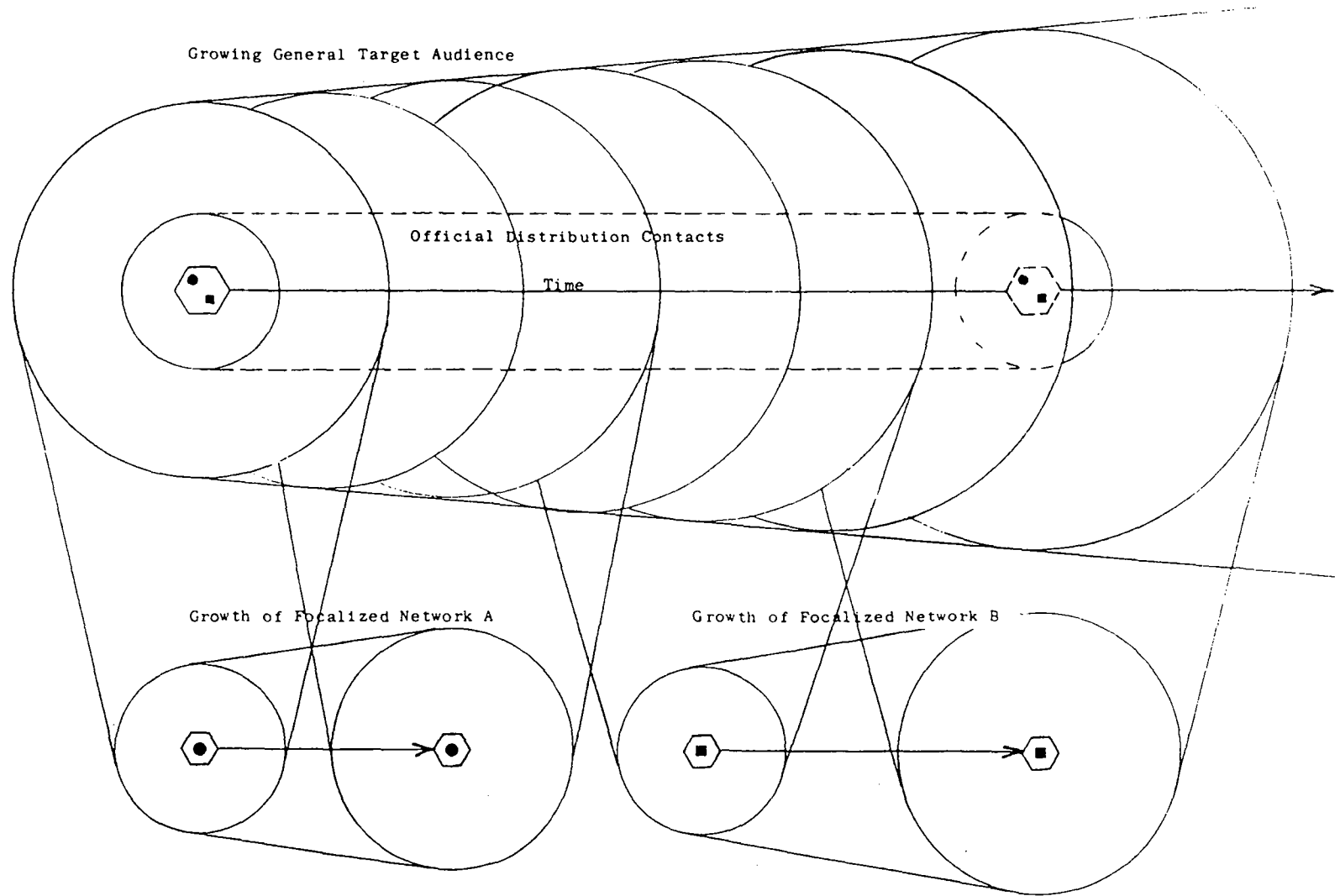
Figure A2-2 Relationship Between Network Focalization, Network Growth, and Time

Figure A2-3   General Procedure for the Development and Implementation of the Focalized Network Information Service Programme

		Remarks	Preparatory Stage	Initiation Stage	Activity Stage	Completion Stage
1.	Identification of the focal subject, the target audience and the period of activity	See Annex 4 for the range of support activities	I—I			
2.	Identification of the linkage and dissemination structure based on past contacts, directories and other sources of information and the preliminary correspondence	The basic distribution list (Annex 4, lists of seminar participants useful	I—I			
3.	Central Information Processing (CIP) activities					
	a. Informational resources available at PEPAS readily packageable for dissemination	Items under sections A and D of Annex 4	I————————————		————————I	
	b. Those buried under PEPAS holdings, waiting for some kind of information evaluation	Items B, D, and E of Annex 4	I————————————		————————I	
	c. Current arrivals from other information sources	Journals, books, reports, PEPAS activity outputs, etc.		I————————	————I	
	d. Informational materials gathered in the process of FNP activities either from the network participants or by PEPAS				I—I	
4.	Initial correspondence describing the FNP activities, the subject, the participating members, expected outputs, target date of completion and frequency of interaction.					
	a. a standard brochure describing the FNP	To be prepared		I—I		
	b. confirmation of interest and willingness to contribute as a local information source, a local focal point for further dissemination, etc.			I—I		
5.	Interactive correspondence				I—I	
6.	Preparation and distribution of regular updates of information and of the FNP activities				I—I	
7.	Transmittal of packaged informational materials including those obtained from the participants and other sources of information				I—I	
8.	Preparation of the target output					I—I
9.	Reformation of the network into new networks					I—I
10.	Integration of the participants into the general target audience pool for possible future network formation.					I—I

Annex 3

Brief Description of Three Proposed
Pilot Projects
and Their Network Configurations

PILOT PROJECT 1.   MALAYSIAN NATIONAL DRINKING WATER QUALITY
SURVEILLANCE PROGRAMME

Background

- a national project currently being implemented by the Division
of Engineering Services (DES), Ministry of Health, Malaysia
- PEPAS has been heavily involved from the conceptual development
stage to the formulation of detailed plans and programmes
- a pilot project is to be implemented in full operational scale
in the State of Negri Sembilan
- all details have been more or less worked out, including
preparation of all resource mobilization logistics
- second pilot project is to be launched also in the State of
Kelantan
- there is going to be a state workshop to be held in late August
or in September

Major points of interest to PEPAS

- this is a project PEPAS could easily monitor with regard to the
relevancy of PEPAS activities in the area of information system
development and information service provision
- the experience gained out of this project enables PEPAS to
develop the capability to guide national governments in
performing information service activities which would be much
more relevant and sensible than those currently being carried
out
- the basis of developing a good information system on the
subject of drinking water quality surveillance was quite
deliberately incorporated at the conceptual development stage
- this could most likely shed some light on how far most
(technical) information seeps down the distal network elements
to the ultimate information users

Major topics of analysis

- what information is wanted at what level in the system
- what kind of system accommodation is necessary to make the
system responsive to a smooth flow of information
- to what extent does the absence of basic information interfere
with the operation of the surveillance system
- what makes sub-professionals become sufficiently conscious of
information needs and make them active information seekers
- what kind of network or dendritic information flow structures
emerge as viable

Possible problems and constraints

- DES may be understaffed to monitor the project in sufficient
detail
- some study expenses may incur

PEPAS

Direct
Consul-
tation

Information
Translation and
Packaging

Query
Response
Service

Federal
(Ministry
of Health)

State
(Health
Depart-
ment)

District
(Health
Offices)

Operational
Logistics
for
Programme
Implementation

Technical
Exposure

Programme
Management
Methodo-
logies

— — — — — Passive Approach

———————— Active Approach
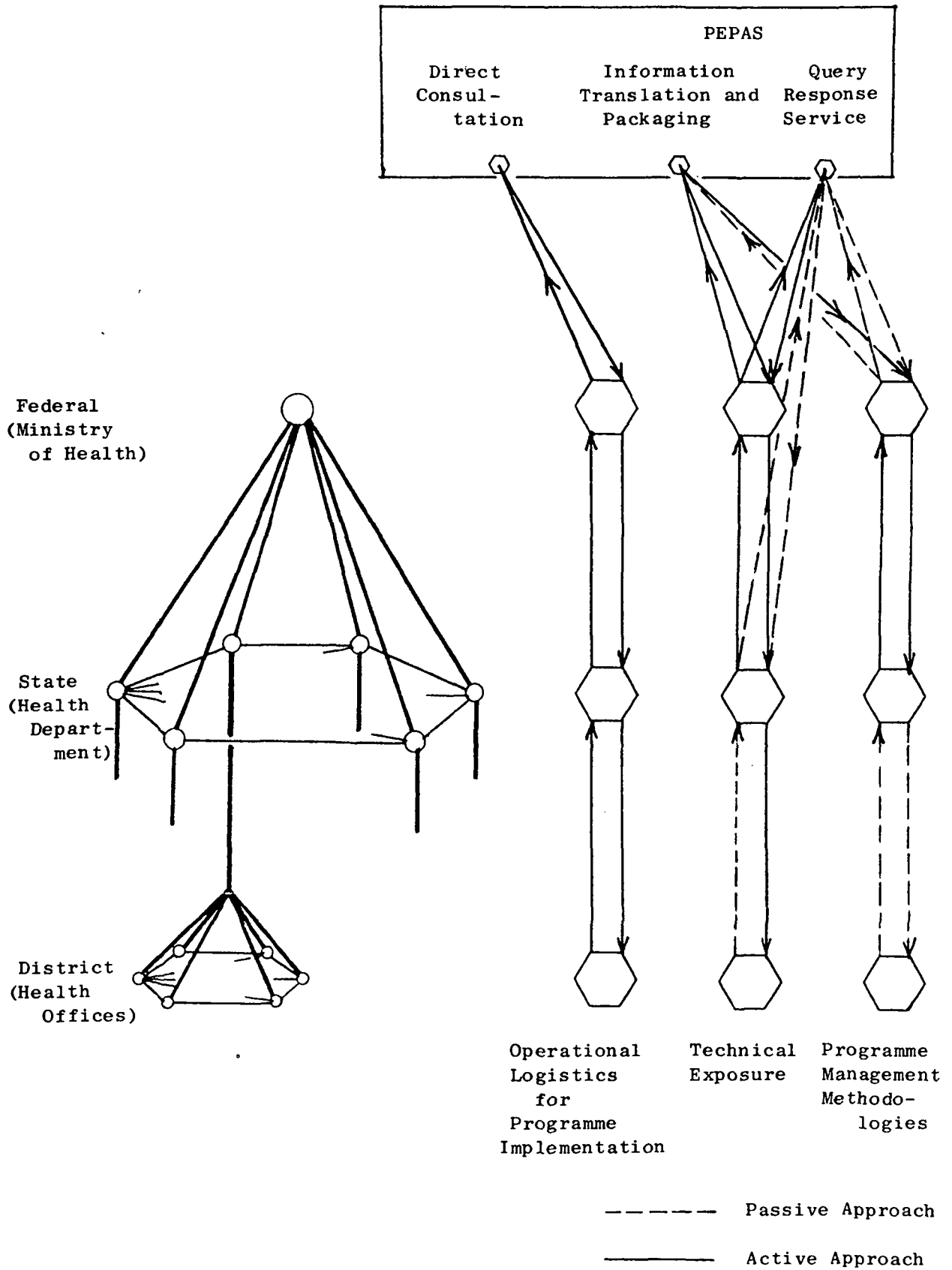
Figure A3-1   Interaction between PEPAS and Malaysian National
Drinking Water Quality Surveillance Focalized Network

PILOT PROJECT 2. UNDP DECADE ADVISORY SERVICE
CASE STUDIES

Background

- see copy of the project description brochure
- the project has information dissemination and utilization as one of the priority emphasis points
- a second workshop was held in Kuala Lumpur from 20-24 August 1984 to which PEPAS sent resource persons

Major points of interest to PEPAS

- this is a bi-regional project having a good mix of participating countries
- this is a Decade project, thus could be linked up with POETRI
- already almost two years have been spent on the project and some group identity has been established
- subject coverage is wide and it enables us to examine different characteristics on information sources, information utilization and information service functions and provisions
- guidelines and criteria produced by the participating groups could be usefully examined by PEPAS and assimilated into its information system
- possible further collaboration could be explored for dissemination of the project outputs through the proposed PEPAS information system channels

Major topics of analysis

- what supporting functions could PEPAS play in a project which is administered by other EH component programmes or by a non-EH programme
- how would time and distance factors enter into the effectiveness and efficiency of information service delivery
- how much intra-network information exchange takes place in the network, the participants of which have already gained some sense of group identity and belonging
- under what circumstances does most effective secondary and tertiary information seepage take place

Possible problems and constraints

- PEPAS has not been involved in the conceptualization nor implementation of the project and thus it has no relevant channels of information transfer except through the two network focal points, i.e., the project coordinators
- because of separate subject coverage by the participating parties the network may not have the necessary level of affinity to operate as a functional network

PEPAS

Information Translation and Packaging

Query Response Service

UNDP/WHO
Focal
Point(s)

Project
Focal
Points

Related
National
Projects

Network
of
Insti-
tutions

Operational
Logistics
for
Programme
Implementation

Technical
Exposure

Programme
Management
Methodo-
logies

— — — — — Passive Approach

——————— Active Approach
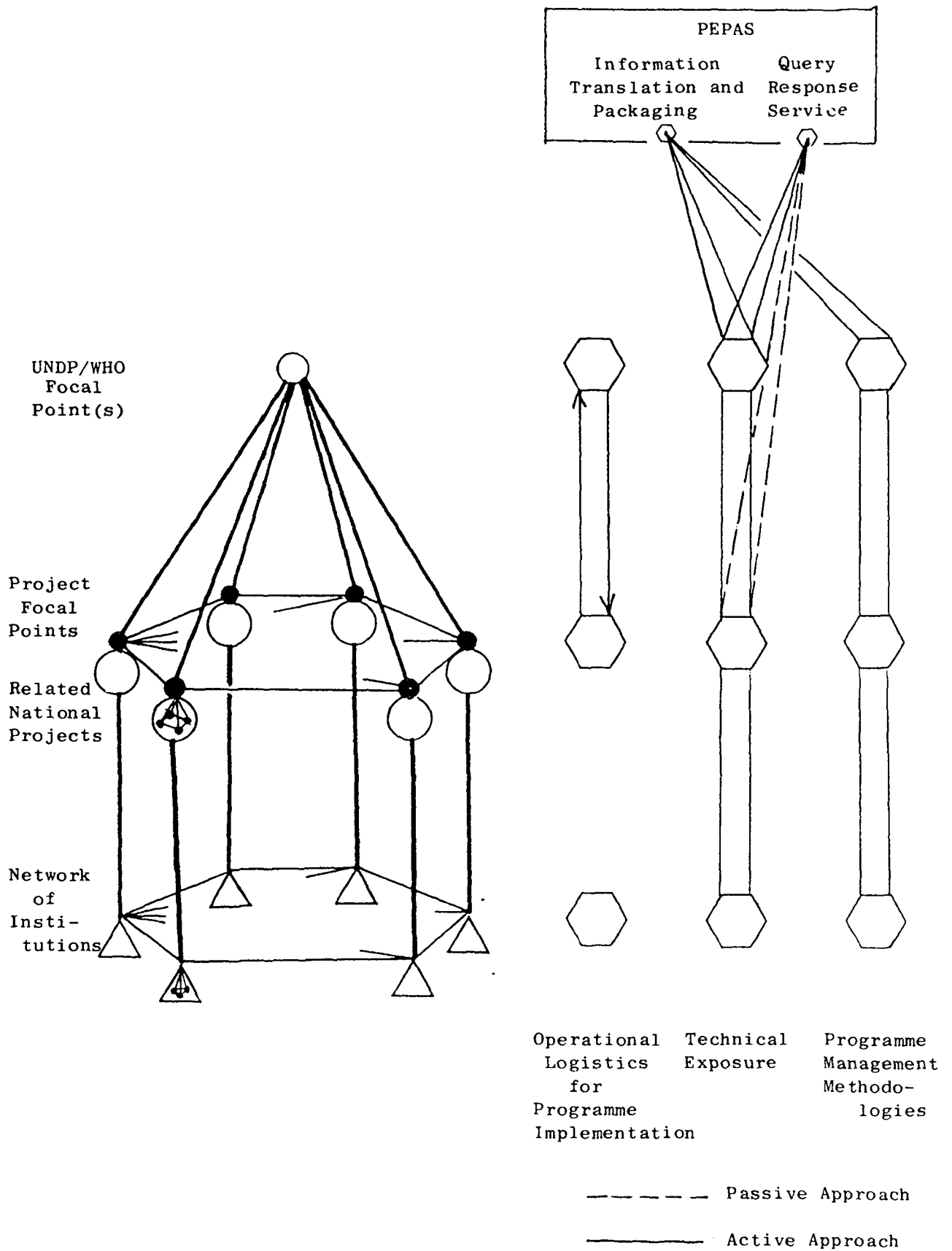
Figure A3-2 Interaction between PEPAS and UNDP/WHO

Decade Advisory Service Case Study Projects

PILOT PROJECT 3. WPRO/EH FIELD STAFF NETWORK

Background

- the EH field staff network is currently being looked after from the Regional Adviser's office, but there are no special provisions made for the network to function as an information dissemination and feedback network as being conceptualized
- PEPAS has been involved in the transfer and exchange of information on the relevant technical subjects on an <u>ad hoc</u> basis, thus failing to create the sense of belonging and fulfillment on the part of the field staff to PEPAS activities
- PEPAS has not taken advantage of the expertise of the EH field staff in carrying out PEPAS activities

Major points of interest to PEPAS

- tnere is already a network structure of sorts existing which is being operated mainly for administrative purposes from the Regional Adviser's office.
- the institution of the information network structure will most likely strengthen the linkage between the operations managed from the Regional Office and those managed from PEPAS

Major topics of analysis

- how PEPAS can best accommodate EH field staff in the execution of field projects
- to what extent could PEPAS satisfactorily respond to the requests and feedback of the EH field staff so as to become more responsible and pertinent to EH field staff as well as to the governments of the Member States
- how could PEPAS coordinate technical collaboration projects and EH field staff inputs more effectively at the national level

Possible problems and constraints

- it will take sometime to get a clear understanding of the sharing of operational responsibilities between PEPAS and WPRO/EH in information management
- to make the network adequately functional the field staff ought to be recognized as an integrated part of the PEPAS information system rather than mere receivers of information

PEPAS

Information Translation and Packaging

Query Response Service

Regional Office (EHE)

EH Field Staff

National Government Agencies and Individuals

Operational Logistics for Programme Implementation

Technical Exposure

Programme Management Methodologies

_ _ _ _ _ _ Passive Approach

_____ Active Approach
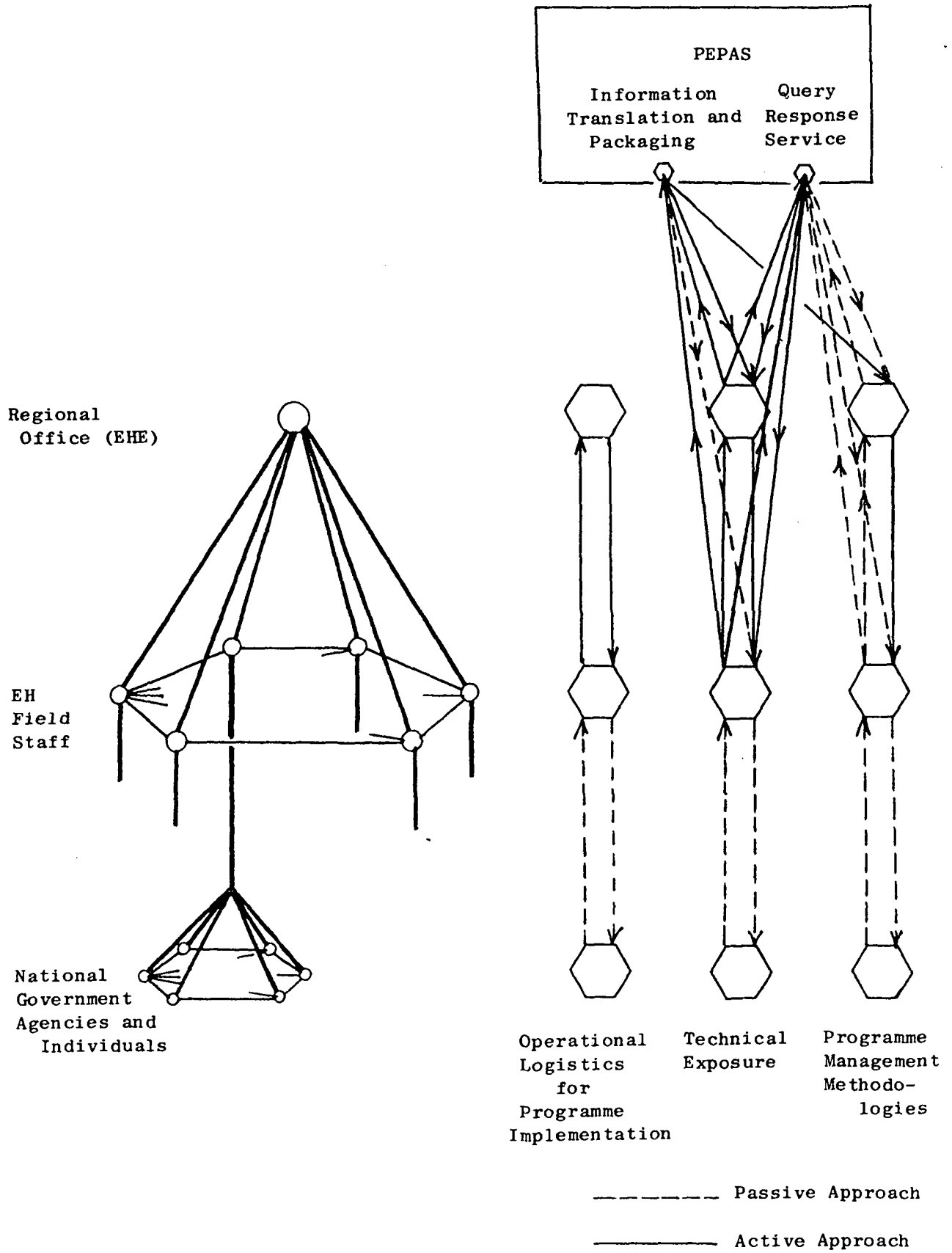
Figure A3-3   Interaction between PEPAS and WPRO/EH
Regional Advisors and EH Field Staff

Annex 4

List of Possible Range of
Information Processing Activities
of Interest to PEPAS

A. INFORMATIONAL MATERIALS PRODUCED IN CONNEXION
WITH ROUTINE OFFICIAL AND SEMI-OFFICIAL PEPAS ACTIVITIES

1. **Assignment reports prepared by PEPAS staff and short-term consultants**

   - See Attachment A-1 for those already available
   - Some reports are still restricted

2. **PEPAS regional group training activity reports**

   - See Attachment A-2 for those already available
   - All reports may be distributed

3. **PEPAS technical documents**

   - See Attachment A-3 for those already available
   - Include regional surveys
   - Technical manuals

4. **PEPAS staff and consultants' papers prepared for regional and
   national group training activities and non-PEPAS meetings**

   - See Attachment A-4 for those already available

5. **Publications prepared by national governments on PEPAS-supported
   activities**

   - See Attachment A-5 for those already available
   - Some redundancy to item 3 above

6. **Special PEPAS activities on bibliographic and referral documentation**

   - See Attachment A-6 for those already available

B. COMPILATION OF PUBLISHED RESOURCE MATERIALS
FOR INTERNAL AND EXTERNAL
REFERRAL SERVICES

1. **General collection of books**

   - list available for current collection

2. **Professional journal subscriptions**

   - list available for those currently subscribing

3. **WHO publications for public distribution**

   - list available for current collection

4. **Important publications prepared by other UN and NGO agencies**

   - list available for current collection

5. **WHO internal programme documents**

   - list available for all relevant documents available

6. Other documents

    -   Newsletters
    -   Loose papers
    -   Technical communications
    -   Technical as well as non-technical loose materials such as
        brochures, pamphlets, etc.
    -   Extraction of useful information for dissemination having special
        significance to PEPAS

7. Personal collections of staff

    -   Collection of books and papers on special areas of interest

C. CONSOLIDATION OF INTERNALLY PRODUCED PEPAS OUTPUTS AND EXTERNALLY OBTAINED RESOURCE DOCUMENTS

1. PEPAS Circular

    -   very short and concise description of various activities
    -   only for selected activities

2. Annual report (or summary of activities)

    -   for 1983 and 1984; summaries of activities
    -   for 1985 onwards (to be published in 1986 onwards); annual reports
    -   description of comprehensive status for the year

3. Information sheet (or occasional updates)

    -   on subjects of current technical interest
    -   to be published irregularly but in sufficient frequency
    -   subject coverage to be determined by taking note of the
        activities of focalized networks

4. Technical monographs

    -   on subjects requiring in depth coverage based on items under
        section A (informational materials regularly produced at PEPAS)
    -   revision or modification of technical monographs prepared by
        other WHO offices including CEPIS and WHO/HQ

5. Guidelines

    -   compilation in summary forms on important subjects of technical
        guidelines prepared within WHO, prepared by national governments,
        or prepared by other organizations and agencies

    -   preparation by PEPAS of draft guidelines on subjects requiring
        special attention for possible regional dissemination

D. COLLECTION AND COMPILATION OF RESOURCE DOCUMENTS FROM ALREADY ESTABLISHED CONTACTS

1. **Items under Sections A(5) and A(6)**

   - Publications prepared by national governments on PEPAS supported activities
   - Special activities on bibliographic and referral documentation

2. **Compilation of general information source lists**

   - See Attachment D-1
   - General environmental information directories

3. **UN Water Decade-related directories and lists**

   - See Attachment D-2
   - Compilation of scattered pieces of information on Decade-related subjects

4. **Documents on subjects of special interest**

   - Subjects on which PEPAS has technical expertise and/or a special regional mandate such as appropriate technology on water supply and sanitation, toxic and hazardous waste management, codes of practice, health criteria of air pollution in hot climates, systems analysis methods applied to environmental health planning, etc.

5. **Products of major environmental information systems of interest**

   - Partly included in B (4)
     AIT (ENSIC, Ferrocement Information Centre)
     WASH
     USAID
     IRC
     NEERI
     IDRC

E. COMPILATION OF REGIONAL SURVEY RESULTS

1. **Regional surveys already conducted by PEPAS and outputs produced**

   - Those coming under A(3); e.g. food safety administration, noise control policy and legislation, land-based sources of pollution, ASEAN-EEC proposal, etc.
   - Those coming under A(5); selected ASEAN environmental bibliographies, etc.

2. **Assessment of Global Environmental Monitoring System (GEMS) data and information**

   - Some pre-processing done at PEPAS and compilation done by collaborating centres and WHO/HQ
   - Some detailed analysis of data may be both beneficial and necessary

3. **Consolidation of country papers prepared for PEPAS regional group training activities**

    -   Some useful national statistics on subjects of interest
    -   No effort has yet been made to consolidate national papers on already conducted activities
    -   Uniform data collection formats need to be prepared for future undertakings

4. **Regional surveys known to have been conducted or most likely conducted outside PEPAS**

    -   Environmental administrations, manpower, legislative provisions, etc. (most likely done by UNEP, also e.g. Japan Environmental Law Journal No.6; Environmental Problems and Their Legal Controls in Asian Countries)
    -   Environmental health administrations, manpower, legislative provisions, etc. (information in non-integrated form available at PEPAS, including information on key personnel)
    -   Regional situation analysis on specific subject areas, e.g.,
        solid waste management (e.g. AIT seminar in 1979 and 1981)
        enviromental impact assessment (e.g. UNEP, AIT, SEARO, etc.)
        electronic data processing capability (e.g. AIT)
        computer softwares on environmental subjects (e.g. AIT?)
        environmental legislation (e.g. ESCAP?)
        industrial pollution control technology and cost (e.g. ESCAP, etc.)
        hazardous waste management (e.g. NEERI, UNEP, etc.)
        water supply and sanitation, policy, administration, other
        vital statistics (e.g. WPRO, AIT-ENSIC, IDRC -
        Dr Tan Bock Thiang, etc.)
        sewerage policies and practices (?)
        environmental master plans (?)
        air pollution situation assessment and pollution control
        practices (?)

5. **Regional surveys which could be meaningfully undertaken by PEPAS**

    -   Situation assessment on housing and sanitation, policy, standards, legislation, etc. (under preparation for implementation)
    -   Drinking water quality standards
    -   Drinking water quality surveillance practices
    -   River water quality monitoring practices
    -   Coastal water quality standard
    -   Coastal water quality monitoring practices
    -   Air pollution control (administration, legislation, practices)
    -   Drinking water supply technologies (appropriate technologies under D(4)
    -   Environmental health information systems and related information on support activities and capabilities
    -   Enviromental consultants (possibly available from ADB, etc.)
    -   National and regional environmental health associations
    -   Basic environmental health statistics (could be obtained by making use of WPRO information base)

F. DEVELOPMENT OF TRAINING SUPPORT AND INFORMATION SYSTEM
SUPPORT MATERIALS

1. __Training manuals, guidelines, codes of practice (see also A(5) and C(3)__

    - Consolidation of resource documents collected on appropriate subjects
    - Effort to be made to collect up-to-date materials on a regular basis
    - Some possible subject areas;
        Solid waste management
        Toxic chemicals and hazardous waste management
        Water quality management field surveys
        Basic water quality laboratory analysis
        Air quality management field surveys
        Basic air and water quality monitoring data analysis

    - EURO Interim Document series to be specially noted.

2. __Audio-visual support materials__

    - Slides, movies, videos, tapes
    - Regular contacts with instructional resource centres in the region as well as outside the region
    - Directory of instructional resource centres to be compiled

3. __Micro computer software collection for use in training activities__

    - Scientific analysis packages
    - Business management analysis packages
    - Data base management packages
    - Learning aid packages

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS

Consultant	Title of Report	Location	Assignment Period
K.M. Yao	PEPAS technical cooperation to Laguna de Bay comprehensive water quality management project (Industrial waste control)	Philippines	5.2.79 - 20.4.79
*R. Skrinde	Water supply & sewerage development	Malaysia	7.2.79 - 8.3.79
N.Y. Kirov	Strengthening of environmental health and environmental studies programme at Seoul National University (Phase 1)	Republic of Korea	6.5.79 - 1.6.79
*R.B. Engdahl	University air quality management course	Malaysia	13.5.79 - 13.11.79
K.M. Yao	Industrial waste control	Malaysia	11.6.79 - 30.8.79
N.Y. Kirov	Air quality management	Malaysia	6 weeks intermittently from June - Oct.1979
F.C. Go, E.W. Lee, K.M. Yao & P. Guo	Report of the WHO Environmental Health Group technical visit to the People's Republic of China	China	23.7.79 - 8.8.79
R. Dick	Palm oil wastewater management in Papua New Guinea	Malaysia, Papua New Guinea	3.8.79 - 28.8.79
H.J. Karpe	Effluent control schemes & their economic aspects	Philippines	8.8.79 - 7.9.79
J.W. Milliman	Preinvestment planning for water supply and sewerage development	Regional	3.9.79 - 14.9.79
N.Y. Kirov	Air pollution control (Stationary sources - Phase 1)	Philippines	27.8.79 - 27.9.79
S.H. Whitlow	Technical cooperation services in development of a system for storage & retrieval of air quality data: environmental data handling	Philippines	12.9.79 - 12.10.79

*An asterisk denotes that the report is derestricted.

LIST OF PEPAS CONSULTANT'S ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
K.M. Yao	Linggi River Basin water quality planning	Malaysia	17.9.79 - 24.4.80 (intermittently totalling 1.5 m/m)
K.M. Yao	Drinking water quality monitoring & surveillance	Tonga	13 - 29.10.79
N.Y. Kirov, A.C. Stern & R.B. Engdahl	Malaysian national seminar on air quality management	Malaysia	15.10.79 - 26.10.79
N.Y. Kirov	Programming for, and evaluation of, environmental protection policies and strategies	TTPI	30.10.79 - 23..11.79
K.M. Yao	Drinking water quality monitoring and surveillance	Papua New Guinea	1.11.79 - 19.11.79
*W.H. Cates	Land use planning & environmental considerations	Philippines	7.11.79 - 1.1.80
G. Werner	Regional environmental information system development	Malaysia	9.11.79 - 20.12.79
*R.G. Berrey	Financing of water pollution control programmes under the jurisdiction of the LLDA	Philippines	9.1.80 - 16.2.80
*O.V. Natarajan	Training of water and sewerage works operators	TTPI	14.2.80 - 10.4.80
*H.F. Ludwig	Appropriate technology in Philippines Government environmental programmes	Philippines	18.2.80 - 17.3.80
N.Y. Kirov	Air Pollution Control (Source Emission Inventory - Phase II)	Philippines	25.2.80 - 24.3.80
D.A. Schur	Technical cooperation services in evaluation of the need and feasibility to develop environmental information systems and linkages to existing air and water quality data handling systems	Philippines	3 - 31.3.80

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
*H.W. de Koning	Report on a visit to the People's Republic of China - WHO/UNEP GEMS Health-related air quality monitoring	China	9.4.80 - 16.4.80
S.A. Slorach	Report on a visit to the People's Republic of China - WHO/UNEP GEMS Pilot Project on assessment of human exposure to pollutants through biological monitoring	China	7.4.80 - 21.4.80
N.Y. Kirov	Air quality monitoring (GEMS/Air)	China	9.4.80 - 29.4.80
*K.M. Yao, C.D. Stevenson & M.E.U. Taylor	Training Course on water quality monitoring	China	6.5.80 - 31.5.80
E. Drew	Overview of land-based pollution sources in South-East Asia	Malaysia, Philippines, Indonesia, Thailand	5.5.80 - 29.6.80 1.9.80 19.10.80
R. Ludwig	Marine outfall sewer planning and preliminary design	Cook Islands	12.5.80 - 11.7.80
N.Y. Kirov	Environmental staff training needs	Philippines	26.5.80 - 16.6.80
*R.I. Dick, K.M. Yao, M. Nakamura	National symposium on industrial wastewater control	Malaysia	1.7.80 - 24.7.80
M. Nakamura	Strengthening of environmental pollution control manpower development programmes (Phase II)	Republic of Korea	22.10.80- 21.11.80
K.M. Yao	Evaluation of nightsoil and sewage treatment and disposal practices	Republic of Korea	14.10.80 - 15.11.80

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
*P. Nimmo	Air quality assurance and monitoring technology (NPCC) and air quality monitoring plan (NEPC)	Philippines	3.11.80 - 19.11.80
P. Nimmo	Air quality assurance and monitoring technology	Malaysia	20.11.80- 3.12.80
*K.M. Yao P.N. Wang	Training course on monitoring and surveillance of drinking water supply for environmental control of diarrhoeal diseases, South Pacific	Regional	29.11.80- 18.12.80
K.M. Yao	Linggi River Basin water quality planning	Malaysia	5.1.81- 6.8.82 (intermittently
K.M. Yao	Water quality monitoring	Philippines	20.1.81 - 20.2.81
*R. Angelotti	Survey & monitoring of food contaminants	Malaysia	31.1.81 28.2.81
*S. Yoshimoto	Review of food standards and legislation (Phase 1)	Papua New Guinea	6.2.81 - 28.2.81
*N.Y. Kirov G. Cleary B. Thiele	National training course on air quality management	China	1.4.81 - 30.4.81
*R. Ludwig	Finalization of designs for sewerage facilities including marine outfall, Avarua	Cook Islands	1.4.81 - 15.5.81
R.B. Engdahl	Air pollution research and development	China	4.4.81 - 3.5.81
A. Rivera- Cordero	Review of environmental health policies and legislation	Philippines	2.5.81 - 30.5.81
PEPAS	Draft ASEAN project proposals for funding consideration by EEC; Pollution control technology and pollution monitoring	Indonesia, Malaysia, Philippines, Singapore, Thailand	May/June 1981

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
L. Friberg & B. Lind	Visit to China to discuss WHO/UNEP (GEMS) pilot project on assessment of human exposure to pollutants through biological monitoring (metals component)	China	27.6.81 11.7.81
A. Rivera-Cordero	Preliminary environmental impact assessment of Monasavu Hydroelectric Scheme and Vaturu Water Supply Scheme	Fiji	6.7.81- 31.7.81
T. Harris	Environmental information system development	Malaysia	17.7.81- 14.8.81
*A. Rivera-Cordero	Development of effluent charge system for industries	Philippines	11.8.81- 3.10.81
K.M. Yao	Assessment of water treatment plants	Malaysia	22.6.81 - 12.3.82
F.K. Kaferstein & S. Yoshimoto	Technical visit on food hygiene	China	10.8.81- 21.8.81
K.M. Yao	Pre-seminar visit for national seminar on hygienic treatment and use of nightsoil	China	21.8.81- 3.9.81
R. Davies & S. Yoshimoto	National food control seminar	Fiji	19.10.81- 23.10.81
G. Cooper & M. Nakamura	National training seminar on solid waste management	Malaysia	1.10.81- 31.10.81
J. Southerland	Air pollution/source emission inventories	Malaysia	21.10.81- 20.11.81
Y. Hasegawa, S.A. Slorach, T. Kashimoto & R. Vaz	National training course on biological monitoring (organochlorine compounds)	China	16.11.81- 26.11.81
J. Middleton	Motor vehicle pollution control	Malaysia	23.11.81- 15.1.82

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
*K.M. Yao D. Barua & N. Kagei	National seminar on hygienic treatment and use of nightsoil	China	30.11.81 - 22.12.81
T. Nakashima	Automobile pollution control	Republic of Korea	1.2.82 - 15.3.82
M. Vahter	Planning of training course in metal toxicology and analysis	China	6.3.82 - 9.3.82
K.M. Yao & C.D. Stevenson	Training course on water quality monitoring	Republic of Korea	30.3.82 - 25.4.82
M. Nakamura	Informal lecture series on environmental systems analysis	Malaysia	5.3.82 - 9.5.82 & 27.8.82 - 30.9.82
M. Nakamura	Seremban case study on solid waste management	Malaysia	March- October 1982 (inter- mittently)
S. Yoshimoto	Review of food standards and legislation (Phase 2)	Papua New Guinea	4.4.82 - 7.6.82
M. Nakamura	Development of a conceptual framework for the national urban solid waste management plan	Malaysia	28.4.82 - 12.5.82
L. Friberg B. Lind & B. Yeoman	National training course on biological monitoring (metal toxicology and analysis)	China	3.5.82 - 15.5.82
A. Rivera- Cordero	Consultation on environmental impact assessment procedures	Malaysia	7.6.82 - 16.7.82
M. Nakamura	Preseminar visit to discuss the plan to hold a national solid solid waste management seminar	Republic of Korea	9.6.82 - 14.6.82
M. Nakamura	Preseminar visit to discuss the plan to hold a national solid waste management seminar	Philippines	21.6.82 - 25.6.82

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
H. Akimoto	Project on research and monitoring of atmospheric pollution (photochemical reaction studies)	China	29.6.82 - 14.7.82
A. Rivera-Cordero	Technical cooperation services on pollution control plans and programme review	Philippines	19.7.82 - 27.8.82
A. Rivera-Cordero	Review of environmental health policies and legislation (Phase 2)	Philippines	30.8.82 - 24.9.82
F.C. Go, H.W. de Koning, R. Waller, H. Matsushita, J. Spengler & B. Thiele	National workshop on assessment of human exposure to air pollutants	China	13.9.82 - 21.9.82
K.M. Yao & Y. Magara	Water quality monitoring training course	Malaysia	11.10.82 - 7.11.82
A. Rivera-Cordero	Advisory services on environmental impact assessment	Republic of Korea	11.10.82 - 26.11.82
K.M. Yao & R. Dick	National seminar on treatment technology and control of industrial wastes	China	10.11.82 - 3.12.82
S. Yoshimoto & R. Davies	National seminar on development of a national food control system	Republic of Korea	10.11.82 - 22.11.82
R. Angelotti, R.J. Ronk, K. Kojima & S. Yoshimoto	National training course on management of food safety	China	29.11.82 - 20.12.82
*K.M. Yao	Formulation of a development programme in environmental pollution control technology	Malaysia	July 1980 - Feb. 1983 (Intermittent)

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
M. Nakamura	A review of and advice on the optimization of the national water quality monitoring and management programme (Phase 1)	Malaysia	April 1982 - Jan. 1983 (Intermittent)
A.Q. Khan	Hazardous waste management	Republic of Korea	27.11.82 - 19.2.83
M. Nakamura	Assessment of the need for priority activities in municipal solid waste management	Malaysia	Dec. 1982 - Jan. 1983 (intermittent)
A. Rivera-Cordero	Environmental impact assessment of mining activities	Fiji	28.1.83 - 2.3.83
G. Cooper & M. Nakamura	National seminar on solid waste management	Philippines	9.2.83 - 1.3.83
K.M. Yao	Pre-workshop visit for China Decade workshop	China	3.3.83 - 14.3.83
A. Rivera-Cordero	Klang Valley environmental management plan	Malaysia	20.3.83 - 15.4.83, 9.5.83 - 27.5.83
G. Bachmann	Simple piped water supply systems including operation and maintenance training material and upgrading of drinking water standards	Republic of Korea	2.4.83 - 1.5.83
M. Nakamura	Review and development of surveillance and control of the drinking water quality programmes	Malaysia	April - December 1983 (intermittent)
M. Nakamura	A review of and advice on the optimization of the national water quality monitoring and management programme (Phase 2)	Malaysia	April - December 1983 (intermittent)
K.M. Yao, P.M. Guo & E. Lee	International Drinking Water Supply and Sanitation Decade Workshop	China	14.4.83 - 11.5.83

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
M. Nakamura	Preparation of Draft Action Plan for pollution control in the Federal Territory	Malaysia	March – Sept. 1983 (intermittent)
K.M. Yao, R. Detels & O.S. Miettinen	National training course in environmental health epidemiology	China	20.6.83 – 13.7.83
K.M. Yao	Field visit to Singapore to discuss proposal for a WHO regional workshop on public water supply leakage and wastage control	Singapore	28.7.83 – 29.7.83
P. Guo M. Nakamura & M. Tanaka	National seminar on solid waste management	Republic of Korea	27.6.83 – 7.7.83
A. Rivera-Cordero	Environmental impact assessment procedures – Part 1	Philippines	2.8.83 – 30.9.83
G. Cooper	Investigation into solid waste management practices	Brunei	21.8.83 – 14.9.83
D. Barua, Y. Magara & K.M. Yao	Second national seminar on hygienic treatment and utilization of nightsoil	China	19.9.83 – 12.10.83
S.A. Miller, A. Matsui & S. Yoshimoto	National workshop on food safety laws	China	13.10.83 – 18.10.83
K.M. Yao	Report on a technical visit to Singapore to discuss possible technical collaboration between PEPAS and concerned Government agencies	Singapore	19.10.83 – 21.10.83

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
K.K. Chin, D.A. Okun, P.V. Hebert & K.M. Yao	National workshop on rural water supply technology	China	29.10.83 - 22.11.83 -
N.T. Stephens, R. Turnbull & A. Rivera-Cordero	National workshop on environmental impact assessment	Malaysia	3.11.83 - 30.11.83
M. Nakamura	A review of the formulation of a national workplan on toxic chemicals and hazardous substances control	Philippines	2.11.83 - 31.11.83
K. Kojima, G. Mills & M. Nakamura	National training course on drinking water quality surveillance	Malaysia	12.12.83 - 16.12.83
L. Mendia	Marine water quality management and monitoring programme and development of the methodology for assessing water quality	Malaysia	1.12.83 - 23.12.83
S. Haryu	Maintenance and operation of community sewage treatment plants	Republic of Korea	28.12.83 - 27.4.84
R. Stoll	Environmental impact assessment of coastal land reclamation	Republic of Korea	9.1.84 - 8.3.84
A. Rivera-Cordero	Notes on a field visit to Papua New Guinea to discuss possible technical collaboration between PEPAS and concerned Government agencies	Papua New Guinea	16.1.84 - 20.1.84
A Rivera-Cordero	Housing sanitation	Philippines	31.1.84 - 30.3.84
B. Fisher & D.J. Ogilvie	National workshop on drinking water quality monitoring and surveillance	Philippines	11.3.84 - 28.3.84

LIST OF PEPAS CONSULTANTS' ASSIGNMENT REPORTS (Cont'd)

Consultant	Title of Report	Location	Assignment Period
D. Barua	Pre-course visit for national training course on microbiological techniques for monitoring treatment of night-soil	China	6.5.84 - 12.5.84
W. Kreisel, R. Rios-Davila, A. Rivera-Cordero & N.T. Stephens	National seminar on environmental planning	China	18.5.84 - 2.6.84
R.I. Dick, N.W. Schmidtke, & K.M. Yao	National seminar on industrial wastewater management	Republic of Korea	13.6.84 - 24.6.84

PEPAS REGIONAL GROUP EDUCATION ACTIVITY REPORTS

1. Final report of WHO Western Pacific Region Working Group on Food
    Hygiene and Food Safety, Kuala Lumpur, 1-5 October 1979.

2. Report of the UNEP/WHO Bi-regional Workshop on Planning for Control
    of Emissions from Motor Vehicles. Kuala Lumpur, 10-14 November 1980.

3. Report of the WHO Western Pacific Regional Seminar on Community
    Health and Planning of Human Settlements. Kuala Lumpur,
    8-12 December 1980.

4. Report of the UNEP/WHO Asia and Pacific Regional Workshop on
    Industrial Environmental Impact Assessment and Siting of Industry.
    Kuala Lumpur, 26-30 January 1981.

5. Report of the WHO Regional Workshop on Financial and Economic Aspects
    of National Water Supply Planning for the International Water
    Decade. Kuala Lumpur, 2-13 November 1981.

6. Report on the WHO/PEPAS Regional Seminar on Industrial and Hazardous
    Waste Control. Kuala Lumpur, 4-8 October 1982.

7. Report of the WHO Working Group on Priorities for Health-related
    Environmental Problems. Kuala Lumpur, 25-28 October 1983.

PEPAS TECHNICAL PUBLICATIONS

1. PEPAS Information Document on various UNEP/WHO projects within the framework of the global environmental monitoring system (GEMS).

2. Planning for control of emissions from motor vehicles. Collection of papers presented at the UNEP/WHO Bi-regional Workshop held in Kuala Lumpur from 10 to 14 November 1980.

3. A review of measurement methods for estimating diesel smoke emissions from motor vehicles. 1981.

4. A manual on air quality monitoring and control. Prepared for PEPAS by the WHO Collaborating Centre for Air Pollution Monitoring for the Western Pacific Region, Brisbane, Australia. (Document EFP/81.21)

5. Preliminary assessment of land-based sources of pollution in East Asian Seas. Full Report. Prepared by PEPAS for UNEP Regional Seas Programme. 1981.

6. Preliminary assessment of land-based sources of pollution in East Asian Seas. Summary Report. Prepared by PEPAS for UNEP Regional Seas Programme. 1981.

7. Industrial and hazardous waste control. Collection of selected papers presented at the WHO Regional Seminar on Industrial and Hazardous Waste Control held in Kuala Lumpur from 4 to 8 October 1982.

8. Public water supply leakage and wastage control. Collection of papers presented at the WHO Workshop on Public Water Supply Leakage and Wastage Control held in Singapore from 12 to 17 December 1983.

STAFF AND CONSULTANTS' PAPERS PREPARED FOR REGIONAL AND   ATTACHMENT A-4
NATIONAL GROUP TRAINING ACTIVITIES AND NON-PEPAS MEETINGS

II.   PAPERS PRODUCED BY PEPAS STAFF AND CONSULTANTS FOR PEPAS-IMPLEMENTED
     ACTIVITIES

Title Of Paper   PEPAS Staff/Consultant

WORKING GROUP ON FOOD HYGIENE AND FOOD SAFETY,
PEPAS, 1-5 OCTOBER 1979

1.   Food hygiene in the Western Pacific   R. Angelotti

2.   Incidence, etiology and epidemiology   M. Jegathesan
     of foodborne infectious diseases in the   (WHO Temporary
     Western Pacific region   Adviser)

3.   Surveillance and control over the   G. Vettorazzi
     introduction to foods of agricultural
     chemicals, environmental pollutants
     and food processing agents.

NATIONAL AIR QUALITY MANAGEMENT SEMINAR,
UNIVERSITI PERTANIAN MALAYSIA (UNIVERSITY OF AGRICULTURE MALAYSIA),
15-26 OCTOBER 1979.

(organized in collaboration with the University
of Agriculture and the Department of Environment,
Malaysia)

1.   The problem of environmental pollution   N.Y. Kirov
     and its control

2.   Nature of air pollutants   R.B. Engdahl

3.   Sources of air pollutants   R.B. Engdahl

4.   Air quality management policies   A.C. Stern
     - the global scene

5.   Effects of air pollutants   R.B. Engdahl

Title Of Paper	PEPAS Staff/Consultant
6. Air quality monitoring programmes objectives and implementation	N.Y. Kirov
7. Air quality criteria and standards - considerations in establishing criteria and standards	A.C. Stern
8. Ambient air quality assessment - instrumentation for monitoring	R.B. Engdahl
9. Data analysis and interpretation	H.W. de Koning
10. Global emission inventory: worldwide emissions	R.B. Engdahl
11. Air pollution control planning - overview and local aspects	A.C. Stern
12. Air pollution and related environmental control legislation - global aspects	A.C. Stern
13. Control of particulate emissions from stationary sources	R.B. Engdahl
14. The burning of fuels in internal combustion engines	N.Y. Kirow
15. Control of gaseous pollutants from stationary sources	R.B. Engdahl

Title Of Paper	PEPAS Staff/Consultant
16. Regulatory control - implementation and enforcement effectiveness, problems and issues	A.C. Stern
17. Control of odours and vapours	N.Y. Kirov
18. Technical implementation of controls	A.C. Stern
19. Socio-economic aspects of air quality management	R.B. Engdahl
20. Environmental manpower training and development	N.Y. Kirov

NATIONAL SYMPOSIUM ON INDUSTRIAL
WASTE-WATER CONTROL, UNIVERSITI PERTANIAN,
MALAYSIA, 7-11 JULY 1980.

(organized in collaboration with the University
of Agriculture and the Department of Environment,
Malaysia)

1. Industrialization and wastewater management planning - a review of the Japanese experience	M. Nakamura
2. Combined treatment of industrial and domestic wastewater	M. Nakamura
3. Industrial wastewater management	K.M. Yao
4. Water quality criteria and standards	K.M. Yao
5. Biological wastewater treatment	K.I. Dick

Title Of Paper	PEPAS Staff/Consultant
6. Physical/chemical treatment of industrial wastewater	R.I. Dick
7. Treatment and disposal of general organic wastewater	R.I. Dick
8. Resources recovery and reutilization, sludge treatment and disposal and toxic waste disposal	R.I. Dick

UNEP/WHO BI-REGIONAL WORKSHOP ON PLANNING AND
CONTROL OF EMISSIONS FROM MOTOR VEHICLES,
PEPAS, 10-14 NOVEMBER 1980

1. Health effects from automobile related air pollution	H.W. de Koning
2. Toxicological assessment of diesel emissions and their technical control	W.E. Kreisel
3. Application of cost-benefit analysis in policy formulation	F.C. Go
4. Alternative sources of energy for internal combustion engines	B.S. Murthy
5. Additives to engine fuels	B.S. Murthy

Title Of Paper   PEPAS Staff/Consultant

WHO WESTERN PACIFIC REGIONAL SEMINAR ON COMMUNITY
HEALTH AND PLANNING OF HUMAN SETTLEMENTS, PEPAS,
8-12 DECEMBER 1980.

1.   Human settlements planning: an introductory   L.A. Viloria
     note

2.   Planning for prevention of disease and   W.C. Loring
     injury caused or contributed to by
     factors external to the human body

3.   A summary of physical and social variables   F.C. Go
     affecting human health in the community
     environment

4.   Rural migration in South-East Asia: D.T. Dennis
     discussion of disease risks in new
     settlements

5.   Urban land reform: an urgent measure   L.A. Viloria
     in less developed countries

6.   Planning programmes for intervention in   W.C. Loring
     residential environmental conditions
     and behavioural customs

UNEP/WHO REGIONAL WORKSHOP ON INDUSTRIAL
ENVIRONMENTAL IMPACT ASSESSMENT AND SITING OF
INDUSTRY, PEPAS, 26-30 JANUARY 1981.

1.   Multi-objective decision making techniques   M. Nakamura
     and models and environmental impact
     assessment - excerpts from selected
     literature

Title Of Paper	PEPAS Staff/Consultant
2. Techniques for environmental assessment	A. Rivera-Cordero
3. Cost benefit analysis in EIA	F.C. Go

NATIONAL TRAINING SEMINAR ON SOLID
WASTE MANAGEMENT. UNIVERSITI PERTANIAN, MALAYSIA
19 - 23 OCTOBER 1981.

(organized in collaboration with the Ministry of
Housing and Local Government, Malaysia)

1. Seremban municipality solid waste management case study: facility location, districting and vehicle routing for solid waste management	M. Nakamura et al
2. Synthesis of planning issues for decision making in solid waste management	M. Nakamura et al
3. Solid waste management: technological alternatives and management options Technical aspects: a) Collection/transport b) Sanitary landfill	G.H. Cooper
4. Solid waste management: technological alternatives and management options Administrative aspects: a) Economics of solid waste management b) Institutional arrangements	G.H. Cooper

Title Of Paper	PEPAS Staff/Consultant
5. A review of fundamental planning factors of solid waste management in developing countries	G.H. Cooper

WHO REGIONAL WORKSHOP ON FINANCIAL AND ECONOMIC
ASPECTS OF NATIONAL WATER SUPPLY AND SANITATION
PLANNING FOR THE INTERNATIONAL DRINKING WATER
SUPPLY AND SANITATION DECADE, PEPAS,
2 - 13 NOVEMBER 1981.

1. Sector and planning studies	A. Rivera-Cordero
2. The time value of money	M. Nakamura
3. Water tariff	A. Rivera-Cordero
4. Note on cost benefit analysis	F.C. Go

WHO REGIONAL SEMINAR ON INDUSTRIAL AND HAZARDOUS
WASTE CONTROL, PEPAS, 4 - 8 OCTOBER 1982.

1. Management of waste plastics in the Republic of Korea	P. Guo (& Kyu-Eung-Kim)
2. The health and environmental significance and management practice of industrial and hazardous waste	S. Iwai
3. Economics of industrial wastewater control - an example	S. Iwai
4. Risk assessment and industrial and hazardous waste control	M. Nakamura

Title Of Paper	PEPAS Staff/Consultant
5. Rapid assessment of the amount of liquid, solid and air-borne wastes from industrial sources	M. Nakamura
6. Hazardous waste disposal	M.E.U. Taylor
7. Hazardous waste treatment technology	M.E.U. Taylor
8. The classification of hazardous wastes	M.E.U. Taylor
9. Formulation of a hazardous waste control strategy	M.E.U. Taylor
10. Sugar mill waste problems in Fiji	T. Videnov
11. Programme formulation and implementation for industrial wastewater control	A. Rivera-Cordero
12. Legislative measures and management strategies for hazardous waste control	K.M. Yao

NATIONAL SEMINAR ON THE DEVELOPMENT OF A FOOD
CONTROL SYSTEM IN THE REPUBLIC OF KOREA,
18 - 20 NOVEMBER 1982.

(organized in collaboration with the Ministry
of Health and Social Affairs, Republic of Korea)

1. Food -borne diseases	R.F. Davies
2. Development of a national food control programme	S. Yoshimoto

Title Of Paper	PEPAS Staff/Consultant

N.... .. .. SOLID WASTE MANAGEMENT,
MANILA, PHILIPPINES, 21 - 24 FEBRUARY 1983.

(organized in collaboration with the National
Environmental Protection Council, Philippines)

1.	Solid waste management in developing countries	G. Cooper
2.	Planning and decision-making tools for solid waste management	M. Nakamura
3.	Decision-making for waste management systems	G. Cooper
4.	Refuse storage facilities	G. Cooper

NATIONAL WORKSHOP ON THE INTERNATIONAL DRINKING
WATER SUPPLY AND SANITATION DECADE, DALIAN,
CHINA, 20 APRIL - 7 MAY 1983.

(organized in collaboration with the Office of
the Central Patriotic Health Campaign Committee,
China)

1.	The International Drinking Water Supply and Sanitation Decade (IDWSSD)	E.W. Lee
2.	Planning for the IDWSSD sector programme and activities	E.W. Lee
3.	Drinking water quality and criteria	K.M. Yao

Title Of Paper	PEPAS Staff/Consultant
4. Basin-wide water quality management	P. Guo
5. Water quality criteria and standards	K.M. Yao
6. Principles of drinking water quality monitoring and surveillance	K.M. Yao
7. Sampling programme planning for drinking water quality surveillance	K.M. Yao
8. Water pollution control technology	P. Guo
9. An evaluation of extended aeration activated sludge package plants	P. Guo

NATIONAL SEMINAR ON SOLID WASTE MANAGEMENT,
SEOUL, REPUBLIC OF KOREA, 4 - 5 JULY 1983.

(organized in collaboration with the Office of
Environment and the National Environmental
Protection Institute, Republic of Korea)

1. Hazardous waste management and information requirements	M. Nakamura
2. Current treatment technologies of hazardous and industrial waste	M. Tanaka
3. Present state of resource recycle technology and technology development trends	M. Tanaka
4. Outlook of recycling of municipal refuse for the future	M. Tanaka

Title Of Paper	PEPAS Staff/Consultant

WHO WORKING GROUP ON PRIORITIES FOR
HEALTH-RELATED ENVIRONMENTAL PROBLEMS, PEPAS,
25 - 28 OCTOBER 1983

1.	Brief summary of WHO Seventh General Programme of Work in environmental health	A. Rivera-Cordero
2.	Intersectoral coordination on environmental health in environmental management: A summary of a report	A. Rivera-Cordero
3.	Studies in environmental epidemiology	K. T. Goh
4.	Notes from "Risk Assessment of Environmental Hazards"	R. Harcourt
5.	Pesticides and related environmental health issues in Malaysia	R. Mahathevan (guest speaker)

SECOND NATIONAL SEMINAR ON HYGIENIC
TREATMENT AND USE OF NIGHTSOIL,
QINGDAO, CHINA, 26 SEPTEMBER - 8 OCTOBER 1983

(organized in collaboration with the Office of
the Central Patriotic Health Campaign Committee,
China)

1.	Microbiological performance of waste treatment	K.M. Yao
2.	Monitoring of treatment of human excreta - faecal indicator organisms	D. Barua
3.	Monitoring of treatment of human excreta - bacteriological analysis	D. Barua

Title of paper	PEPAS Staff/Consultant

NATIONAL WORKSHOP ON RURAL WATER SUPPLY
TECHNOLOGY, NANHAI COUNTY, GUANGDONG
PROVINCE, CHINA, 3-22 NOVEMBER 1983.

(organized in collaboration with the Office of the Central Patriotic
Health Campaign Committee, China)

	Title	Staff/Consultant
1.	Inorganic chemicals in water and health	K.M. Yao
2.	Drinking water quality and criteria	K.M. Yao
3.	Organics in water and health	K.M. Yao
4.	Sanitary performance of water treatment	K.M. Yao
5.	Computerized techniques for improved planning and design of water supply systems	P.V. Hebert
6.	User instructions for LOOP : A basic program for looped water distribution network analysis for the Obsborne - 1 microcomputer	P.V. Herbert (& D. del Puerto)
7.	Control of trihalomethanes in drinking water	K.M. Yao
8.	Water quality management	D.A. Okun
9.	Principles for water quality management	D.A. Okun
10.	Sources of water supply	D.A. Okun
11.	Appropriate technology	D.A. Okun
12.	Coagulation and flocculation	D.A. Okun

Title of paper	PEPAS Staff/Consultant
13. Principles and practices of sedimentation	D.A. Okun
14. Filtration	D.A. Okun
15. Adsorption on activated carbon	D.A. Okun
16. Disinfection	D.A. Okun
17. Miscellaneous water treatment processes	D.A. Okun
18. Water reuse	D.A. Okun
19. Engineering practices in the environmental field in the United States	D.A. Okun
20. Environmental engineering education	D.A. Okun
21. Land use planning and health	D.A. Okun (& B.J. Burby)
22. Drinking water quality through enhancement of source protection	D.A. Okun
23. Small water supply distribution system planning	P.V. Hebert
24. Water supply distribution operation and maintenance	P.V. Hebert
25. Storage reservoir capacity for small communities	P.V. Hebert

Title of paper	PEPAS Staff/Consultant
26. Simple water treatment for rural applications	K.M. Yao
27. Biological activated carbon processes for wastewater treatment	K.K. Chin
28. The removal of excessive fluoride, iron and manganese from waters	K.K. Chin
29. Disinfection of waters	K.K. Chin
30. Desalination of brackish water for water supply	K.K. Chin
31. Removal of heavy metals from water supplies	
32. Impact of design criteria and standards on water distribution costs, Philippine experience	P.V. Hebert
33. Financing small water supply systems	D.A. Okun

Title of Paper   PEPAS Staff/Consultant

NATIONAL WORKSHOP ON ENVIRONMENTAL IMPACT
ASSESSMENT, UNIVERSITI PERTANIAN,
MALAYSIA, 21 - 25 NOVEMBER 1983

(organized in collaboration with the University
of Agriculture and the Department of Environment,
Malaysia)

1.	General principles of environmental impact assessment	A. Rivera-Cordero
2.	Air quality assessment	N.T. Stephens
3.	Assessment of environmental effects on water resources	A. Rivera-Cordero
4.	Socio-economic impacts	R.G.H. Turnbull
5.	Health and environmental effects of water pollution: a review	R.G.H. Turnbull

WHO WORKSHOP ON PUBLIC WATER SUPPLY
LEAKAGE AND WASTAGE CONTROL, SINGAPORE,
12 - 17 DECEMBER 1983

1.	Reducing unaccounted for water in municipal water supply systems	S.J. Goodwin & J.K. McElroy
2.	Dealing with leakage	M.J. Rouse (staff of Water Research Centre, United Kingdom)
3.	The quality control of public water supply	T.F. Lye
4.	Quantity control of water uses	K.M. Yao

Title of Paper	PEPAS Staff/Consultant

NATIONAL SEMINAR ON ENVIRONMENTAL PLANNING,

BEIJING, CHINA, 21 MAY - 2 JUNE 1984

(organized in collaboration with the Ministry
of Urban and Rural Construction and Environmental
Protection, China)

1.	General principles of environmental impact assessment	A. Rivera-Cordero
2.	Intersectoral aspects of environmental planning	A. Rivera-Cordero
3.	The environmental planning process: development of environmental objectives	A. Rivera-Cordero
4.	Environmental planning	A. Rivera-Cordero
5.	The environmental assessment experience in USA	A. Rivera-Cordero
6.	Techniques for environmental assessment	A. Rivera-Cordero
7.	Regional Environmental Master Plan Study - a case study on integrated environmental planning	W. Kreisel
8.	Air pollution control - overview of mobile and stationary source control options for gaseous air pollutants	N.T. Stephens
9.	Air quality management process	N.T. Stephens

Title of paper	PEPAS Staff/Consultant
10. Air quality impact determinations - general discussion	N.T. Stephens
11. The use of models and modeling in environmental planning	N.T. Stephens
12. Water quality planning	R. Rios-Davila

NATIONAL SEMINAR ON INDUSTRIAL WASTEWATER MANAGEMENT, SEOUL, REPUBLIC OF KOREA, 18-21 JUNE 1983

(organized in collaboration with the Office of Environment, Republic of Korea)

1. Physical treatment technology for industrial wastewaters	R.I. Dick
2. Chemical treatment technology for industrial wastewater	N.W. Schmidtke
3. Biological treatment technology for industrial wastewaters	R.I. Dick
4. Combined treatment of industrial and domestic wastewaters	R.I. Dick
5. Organic materials of concern in the water cycle-discharge of industrial wastes	R. Perry
6. Sludge utilization and disposal options	N.W. Schmidtke
7. Management of sludge produced from the treatment of industrial wastewater	R.I. Dick

Title of paper	PEPAS Staff/Consultant
8. Control of toxic substances in industrial effluents.	N.W. Schmidtke
9. Stabilization procedures for treatment of toxic wastes	R. Perry
10. Water quality criteria and standards	K.M. Yao
11. Regulatory aspects of industrial wastewater management	K.M. Yao
12. Effluent standards, effluent limitations and pretreatment requirements for industrial pollution abatement	K.M. Yao
13. Environment considerations for the detergent industry	R. Perry
14. Control and treatment of the wastewaters from the food processing industry	P. Guo
15. Treatment and disposal of wastewater from metal finishing industry	N.W. Schmidtke
16. Treatment and disposal of wastewater from the pulp and paper industry	N.W. Schmidtke

III. PAPERS PRODUCED BY PEPAS STAFF FOR NON-PEPAS ACTIVITIES

Title of Paper   PEPAS Staff/Consultants

ESCAP REGIONAL SEMINAR ON THE APPLICATION OF
SYSTEMS ANALYSIS TECHNIQUES TO ENVIRONMENTAL
PROBLEMS, BANGKOK, 24-28 NOVEMBER 1980.

1.   Acceptability factors in the use of systems   M. Nakamura
     analysis techniques

WHO/AFRO CONSULTATION MEETING ON THE CREATION
OF A REGIONAL NETWORK OF NATIONAL ENVIRONMENTAL
SCIENCES INSTITUTES, DAKAR,
29 JUNE - 3 JULY 1981.

1.   The genesis and programme of the WHO Western   F.C. Go
     Pacific Regional Centre for the Promotion of
     Environmental Planning and Applied Studies.

Title of Paper	PEPAS Staff/Consultants

REGIONAL CONFERENCE ON ENVIRONMENTAL EDUCATION IN ASEAN UNIVERSITIES AND ITS TRANSFER, UNIVERSITI PERTANIAN MALAYSIA 18 - 21 AUGUST 1981

1. The University's role in environmental   K.M. Yao
    education for manpower development
    in developing countries - case studies

NATIONAL SEMINAR ON ENVIRONMENTAL IMPACT ASSESSMENT, REPUBLIC OF KOREA, 14 - 16 OCTOBER 1981

1. The environmental assessment experience   A. Rivera-Cordero
    in USA

UNESCO SEMINAR ON WATER TECHNOLOGY TOWARDS RURAL DEVELOPMENT, UNIVERSITI PERTANIAN MALAYSIA 19 - 22 JANUARY 1982.

1. Water treatment technology for rural   K.M. Yao
    drinking water supplies

WHO/SEARO INTER-COUNTRY WORKSHOP ON RAPID TECHNIQUES FOR ENVIRONMENTAL ASSESSMENT IN DEVELOPING COUNTRIES, BANGKOK, THAILAND, 1 - 5 FEBRUARY 1982.

1. Some considerations in the use of rapid   M. Nakamura
    pollution load assessment methodology

Title of Paper	PEPAS Staff/Consultants

NATIONAL SEMINAR ON AIR QUALITY MANAGEMENT AND
RELATED ENERGY POLICIES, SEOUL, REPUBLIC OF KOREA,
17 - 21 MAY 1982.

1.	General principles of air quality management	A. Rivera-Cordero
2.	Role of environmental impact asessment in air quality management	A. Rivera-Cordero

THIRD ASIAN-AMERICAN CONFERENCE ON ENVIRONMENTAL
PROTECTION, UNIVERSITI PERTANIAN MALAYSIA
23 - 25 AUGUST 1982.

1.	Assessment of land-based sources of pollution in East Asian Seas - preliminary assessment results and the perspective for full assessment exercise	M. Nakamura

FEISEAP/UNESCO SEMINAR ON TECHNOLOGY, UTILISATION
AND MANAGEMENT OF AGRICULTURAL WASTES,
UNIVERSITI PERTANIAN MALAYSIA,
15 - 17 SEPTEMBER 1982.

1.	Agricultural pollution and lake basin water quality management	K.M. Yao

WORKSHOP ON THE ROLE OF THE HEALTH INSPECTOR IN
A CHANGING ENVIRONMENT, INSTITUTE OF PUBLIC
HEALTH, KUALA LUMPUR MALAYSIA, 13 SEPTEMBER 1982.

1.	Solid waste management - planning for national action	M. Nakamura

Title of Paper	PEPAS Staff/Consultants

UNEP COURSE ON OCEAN MANAGEMENT - INDO-PACIFIC
BASIN, GOA, INDIA, 18 - 22 OCTOBER 1982.

1. Asssessment of land-based sources of   M. Nakamura
    pollution in East Asian Seas

REGIONAL WORKSHOP ON LIMNOLOGY AND WATER RESOURCE
MANAGEMENT IN THE DEVELOPING COUNTRIES OF ASIA
AND THE PACIFIC, UNIVERSITI MALAYA,
29 NOVEMBER - 5 DECEMBER 1982.

1. Water quality criteria   K.M. Yao

NATIONAL SEMINAR ON THE DEVELOPMENT AND MANAGEMENT
OF SEWERAGE SYSTEMS, KUALA LUMPUR, MALAYSIA
13 - 17 DECEMBER 1982.

1. Application of K-J method for identification   M. Nakamura
    of planning issues in sewerage

FIRST INTERNATIONAL CONFERENCE ON INDUSTRIAL
POLLUTION AND CONTROL, SINGAPORE,
14 - 17 DECEMBER 1982.

1. Programme formulation and implementation   A. Rivera-Cordero
    for industrial wastewater pollution
    control

Title of Paper	PEPAS Staff/Consultants

REGIONAL WORKSHOP ON RESEARCH AND
TECHNOLOGY TRANSFER FOR ASIAN DEVELOPMENT
ASIAN INSTITUTE OF TECHNOLOGY, BANGKOK, THAILAND,
1 - 3 NOVEMBER 1983

1. The role of PEPAS in technology transfer   K.M. Yao
    for developing countries

REGIONAL SYMPOSIUM ON CHEMISTRY AND
THE ENVIRONMENT IN ASIA, KUALA LUMPUR,
MALAYSIA, MARCH 1984

1. Regulatory measures and management   K.M. Yao
    practices for hazardous waste control

2. Information management for industrial   K.M. Yao
    and hazardous waste control in
    developing countries

FOR PUBLICATION IN THE JAPANESE JOURNAL OF
THE ENVIRONMENTAL CONSERVATION ENGINEERING
ASSOCIATION (VOL 13, NO.1, 1984)

1. Development and its environmental impact   K.M. Yao
    in the Western Pacific

Title of Paper   PEPAS Staff/Consultants

SEMINAR ON NOISE POLLUTION - A NEED FOR CONTROL,
KUALA LUMPUR, MALAYSIA, 10 - 11 JULY 1984

1.   Environmental exposure to noise and   W. Kreisel
      related effects

2.   Noise control legislation and policy   K.M. Yao
      in the Western Pacific   & Y.M. Tan

3.   Noise abatement policies and   W. Kreisel
      enforcement

PUBLICATIONS PREPARED BY NATIONAL GOVERNMENTS FOR
PEPAS-SUPPORTED ACTIVITIES

1. Papers for the Seminar on Environmental Impact Assessment. A
    collection of papers presented at the seminar held in Seoul from
    14 to 16 October 1981. Prepared by the Office of Environment,
    Republic of Korea.

2. National Training Seminar on Solid Wastes Management. A report of
    the seminar held in Kuala Lumpur from 19 to 23 October 1981.
    Prepared by the Ministry of Housing and Local Government, Malaysia.

3. Action Plan on Environmental Issues in the Federal Territory. A
    report reflecting the proceedings of the Workshops/Seminar on
    "Environmental Issues in the Federal Territory" held in 1983,
    organized jointly by the Ministry of Science, Technology and
    Environment and the Ministry of Federal Territory, Malaysia.
    Prepared by the Ministry of Science, Technology and Environment.
    June 1983.

4. National Training Seminar on Development and Management of Sewerage
    Systems. A report of the seminar held in Kuala Lumpur from 13 to 17
    December 1982. Prepared by the Ministry of Housing and Local
    Government and the Ministry of Health, Malaysia.

ATTACHMENT A-6

SPECIAL ACTIVITIES ON BIBLIOGRAPHIC AND REFERRAL DOCUMENTATION

1.   ASEAN environment bibliography. Prepared by the library of
     Universiti Pertanian Malaysia (University of Agriculture, Malaysia)
     in collaboration with WHO (PEPAS). 1981.

2.   Malaysian environment abstracts. Prepared by the library of
     Universiti Pertanian Malaysia (University of Agriculture, Malaysia)
     in collaboration with WHO (PEPAS). 1981. (currently being updated).

ATTACHMENT D-1

GENERAL INFORMATION SOURCE LISTS

1. Directory of Mediterranean marine research centres.   Prepared by
    UNEP, 1977.

2. Directory of services for technical cooperation among developing
    countries.   Prepared by the United Nations Development Programme
    (UNDP), June 1978.

3. Directory of institutions in the ESCAP Region active in environmental
    quality monitoring.   Prepared by the National Environmental
    Engineering Research Institute (NEERI), Nagpur, India and the United
    Nations Environment Programme (UNEP), Nairobi, Kenya, 1978.

4. Directory of Indian Ocean marine research centres.   Prepared by UNEP
    and the National Institute of Oceanography, Goa, India, 1978.

5. Directory of institutions and individuals active in
    environmentally-sound and appropriate technologies.   Published for
    UNEP by Pergamon Press, 1979.

6. Examples of information analysis centres and their products.   Extract
    from "A Handbook on Evaluation, Restructuring and Repackaging of
    Scientific and Technical Information," General Information Programme
    and UNISIST, UNESCO, Paris, July 1981.

7. Register of environmental engineering graduate programs.   4th
    edition.   Prepared by U.S. Association of Environmental Engineering
    Professors.   Published by Ann Arbor Science Publishers. Inc, 1981.

UN WATER DECADE-RELATED DIRECTORIES AND LISTS

1. Rapid assessment reports. Compilation of reports prepared by Member States of WHO Regions on current and prospective sector development. 1978. (updated reports are being collected by the Regional Offices)

2. Sector Digests. (Summary of rapid assessment reports). Prepared by the Global Promotion and Cooperation for Water Supply and Sanitation Programme, Division of Environmental Health, WHO, Geneva, 1980.

3. The International Drinking Water Supply and Sanitation Decade Directory - Donor Catalogue (abstracted from the full IDWSSD Directory). Sources of technical and financial assistance in the field of drinking water supply and sanitation. Published by World Water Magazine in collaboration with the World Health Organization. 1981.

4. Catalogue of external support. 2nd edition. Prepared by Global Promotion and Cooperation for Water Supply and Sanitation Programme Division of Environmental Health, WHO, Geneva. April 1983. (GWS Series of Cooperative Action for the IDWSSD, No.3).

5. Directory of Sources and Services on Community Education and Participation in Water Supply and Sanitation. Prepared by the International Reference Centre for Community Water Supply and Sanitation (IRC) in collaboration with the Water and Sanitation for Health (WASH) programme of USAID.

6. Directory of Sources of Information and Documentation on Community Water Supply and Sanitation. 1st edition. Prepared by the International Reference Centre for Community Water Supply and Sanitation, Programme on Exchange and Transfer of Information (POETRI). July 1983.

7. The International Drinking Water Supply and Sanitation Decade Directory. 2nd edition. Published by World Water Magazine from information provided by the World Health Organization. March 1984.

8. List of IDWSSD documents available at PEPAS August 1984.

9. Drinking water supply and sanitation. Information sources. Selected listing and brief description of institutions, involved in various aspects of drinking water supply and sanitation, registered in the INFOTERRA International Directory and a selected bibliography of publications prepared by the UNEP Water and Soil Task Force and by the International Reference Centre for Community Water Supply and Sanitation. Prepared by the UNEP INFOTERRA programme, Nairobi. 1982.

10. UNICEF guide list OLGA. Rural water supply and sanitation in the developing countries. Prepared by UNICEF in consultation with WHO. 1975. (this publication refers to the equipment, supplies and materials provided by UNICEF to support rural sanitation/water supply projects).

Background Document for the Meeting of
UPM-PEPAS Environmental Information System
Planning Committee

Perpustakaan
UNIVERSITI PERTANIAN MALAYSIA
Serdang, Selangor, Malaysia.

Telefon: 355425
356101
Kawat: UNIPERTAMA SUNGAIBESI
Teleks: UNIPER MA37454

Ruj. tuan:

Ruj. kami: UPM/LF/INS88 (46)

Tarikh: 2 May 1984

To: All members of the Planning Committee of the
Environmental Information System,
The Director, PEPAS
✓Representative, PEPAS
The Head, Dept. of Environmental Science, UPM
Representative, Dept. of Environmental Science, UPM
The Chief Librarian, UPM
The Deputy Chief Librarian, UPM
The Senior Assistant Librarian, Information and
Extension Services Division, UPM

Dear Sir/Madam

Meeting of the Planning Committee of the Environmental Information System

I enclose herewith the agenda for the above meeting to be held on
Monday, 7 May 1984 at 9 a.m. in the Meeting Room, UPM Library.
Papers required for the meeting are also enclosed (UPM/LF/INS88 (44)
and (UPM/LF/INS88 (45)).

Thank you.

Yours sincerely

MRS. B. L. NG
Assistant Librarian
Information & Extension Division

Enclosed
NBL/nmi

AGENDA for the Meeting of the PLANNING COMMITTEE OF
ENVIRONMENTAL INFORMATION SYSTEM to be held on Monday,
7 May 1984 at 9 am in the Meeting Room of the UPM
Library

1. Welcome by the Chief Librarian and introductions.

2. Selection of Chairman for meeting.

3. The Planning Committee and its role.

4. The Environmental Information System: a proposal.

5. Any other matters

Documents Required for the Meeting

Agenda Item no.	Title	Ref. no.
3.	The role of the Planning Committee of the Environmental Information System: Notes for discussion	UPM/LF/INS88 (44)
4.	The Environmental Information System: a proposal	UPM/LF/INS88 (45)

UPM/LF/INS88 (44)

The role of the Planning Committee of the Environmental Information
        System : Notes for discussion

1. Purpose

   a. To determine the objectives of the Environmental Information
      System (EIS).

   b. To guide the planning and implementation of the EIS.

   c. To review from time to time the development of the System.

2. Composition

      In order that the interests of all concerned parties are
   represented, it is recommend that the Planning Committee comprise
   the following members:-

      2 representitives from the Dept. of Environmental
         Science, UPM.

      2 representatives from PEPAS

      4 representatives from the Library, UPM

3. Functions

   a. Plan, design and implement the EIS

   b. Determine the services of the EIS

   c. Evaluate the services provided.

4. Miscellaneous

   Frequency of meetings

THE ENVIRONMENTAL INFORMATION SYSTEM : A PROPOSAL

1. Introduction and Background

The idea of an Environmental Information System (EIS) at Serdang was first mooted in 1979. The proponents were WHO's Centre for the Promotion of Environmental Planning and Applied Studies (PEPAS), the Department of Environmental Science of the Universiti Pertanian Malaysia and the Library of the Universiti. Each was desirous of setting up an information system to cater to the needs of its users. A "Committee of Environmental Information System", composed of representatives from the abovementioned parties and one from the Division of the Environment (DOE) of the Ministry of Science, Technology and the Environment, Malaysia was eventually formed. It initiated discussions for the development of a joint EIS at a meeting on 16 November 1979. Progress was made in some activities, one of which was a report by G. Werner, a PEPAS - sponsored consultant. The report made recommendations for the development of a regional environmental information system. Another was a short-term collaboration between PEPAS and UPM culminating in the publication of two bibliographies for the Regional Conference on Environmental Education in ASEAN Universities and its transfer, held at the UPM on August 18-21, 1981. The publications are entitled: *Abstrak Alam Sekitar Malaysia = Malaysian Environment Abstracts* and *Bibliografi Alam Sekitar ASEAN = ASEAN Environment Bibliography*. Apart from these *ad hoc* activities, "each party appears to have been striving for the development of its own system within its available resources and in view of its own interest and commitments."

Hence this meeting is convened to revive activities necessary for the development of a viable regional information system.

This paper is largely a synthesis of suggestions and recommendations from the following documents:-

a. Syed Salim Agha and Wong Kien Keong. .Environmental Information System at the Universiti Pertanian Malaysia: preliminary discussion paper. (Tabled at the Environmental Information System's 1st Committee meeting on 16 Nov 1979).

b. Syed Salim Agha. The establishment of an environmental information system at Universiti Pertanian Malaysia. *paper presented at the* INFOTERRA National Seminar, Kuala Lumpur, February 1982.

This paper holds the premise that an EIS is "necessary to strengthen the promotion of environmental protection in Malaysia and in the WHO Western Pacific Region". It reiterates what might be the objectives and functions of an EIS, the possible system files, the services that it might offer, the role of the Planning Committee of the EIS and a suggested phasing of implementation.

2. The System Definitions

2a. Objectives and Functions

The objective of the EIS would be to acquire information and data and to make them available in the most useful format to staff members of UPM and PEPAS and to research workers, scientists, planners

and environmentalists in other universities, government departments, the
industry and nature and citizens' lobby groups. The EIS would carry out
the following functions:-

    (i)   Trace, collect and index all relevant literature relating
            to the environment emanating from Malaysia and WHO's Western
            Pacific Region.

    (ii)   Provide literature searches for research and other work,
            and provide access to these documents.

   (iii)   Provide rapid referral to individuals and organizations
            that are associated with various expertise and technology.

    (iv)   Provide the database for environmental indices necessary
            for planning, policy making, predictions and warnings.
            Examples of databases needed are indices on air quality,
            water quality, economic conditions, health and quality of
            life.

2b. Users

As apposed to a discipline-oriented information system which
deals with an area of man's subject knowledge, e.g. chemistry, economics,
a mission-oriented information system is interdisciplinary and deals with
"one of man's major objectives - space exploration, defence or food
production. INIS is a mission-oriented system to support the peaceful
application of atomic energy. AGRIS is the mission-oriented system for
food production." The EIS in this context is a mission-oriented system
for the protection of the environment.

The potential users of the EIS, therefore are expected to be
"simply those people who are themselves involved in the mission" - policy-
makers, planners, managers, scientists, researchers, teachers and "environ-
mentalists" (all other individuals interested in the environment). These
users would belong to universities, the government, industry, and the
public sector.

2c. Scope of the EIS

Environmental concerns cover a broad spectrum of subjects and
are characterized by many (sometimes unforeseen) interlinkages. It is
therefore imperative that the EIS define the subject scope of its coverage,
or in other words, spell out clearly the topics it considers "environmental".
Regional/geographical coverage should also be clearly defined.

The following subject categorized lists are attached for conside-
ration:-

Appendix A.   Pepas Library's Proposed Environmental Bibliographic File.
               March 1981.

Appendix B.   A list proposed by UPM's Dept. of Environmental Studies and
               Library in their joint preliminary discussion paper "Environ-
               mental Information System at the Universiti Pertanian Malaysia"
               (1979).

Appendix C.   "Review Classifications", the subject code used in Environment Abstracts, published by the Environment Information Center, New York.

Appendix D.   The subject categorized list of the Environmental Studies Institute's Environmental Periodicals Bibliography.

Appendix E.   INFOTERRA's list of subject categories.

3. The System Files

It is suggested that the entire system be composed of three major files, each having their sub-files, if need be. These files are:-

3a. The bibliographic File

This file is to record on computer all literature that emanates from Malaysia and other countries of the Western Pacific Region and which may not have been added to any of the international data bases. The establishment of such a file would greatly aid retrospective and current searches for information. It is suggested that this file should also provide access to internationally available data bases like Enviro line offered by the Environment Information Center and AGRIS, the Agricultural Information System of FAO.

3b. The Referral File

This computerized file would contain data on relevant information sources in Malaysia and in the WHO Western Pacific Region such as:-

- experts
- institutions
- information centres
- on-going research and other projects
- standards and criteria

It should be ensured that overlapping with other referral systems, particularly with INFOTERRA (the environmental referral system of the United Nations Environment Programme) is minimal.

3c. The Data File

The objectives of this file would be:-

a. the creation, development and maintenance of an environmental data bank covering relevant data available from a variety of sources.

b. the provision of environmental and other data in a form tailored to the needs of the requester.

c. to assist in the recognition of early warning signals to enable prompt action.

Data referred to in this file refer mainly to statistical data.

4. Services and Products

        Presently the UPM Library offers the following services to its users. Suscribers who are not University members are charged a nominal sum for service. These services could be extended to users of the proposed EIS.

a) Library membership

        By becoming members of the Library, persons would be able to borrow from its collection of books. They would also have access to serials, audio-visual materials, maps and other resources and services. The current deposit rates are as follows:-

(i)   Staff of government and semi-government bodies, part-time staff of UPM, farmers, fishermen and small-scale entrepreneurs are each required to pay $100.

(ii)   Members from firms and private institutions, businessmen and individuals are each required to pay $200.

b) Contents Page Service

        The Library circulates to suscribers, the contents pages of the latest issues of journals it receives. This fortnightly Current Awareness Services enables a user to develop an awareness of his field and to keep abreast with the research and progress in it.

The current annual subscription rates for this service are:-

$$
\begin{array}{rcl}
1 - 10 \text{ titles} & - & M\$15.00 \\
11 - 25 \text{ titles} & - & M\$30.00 \\
26 - 50 \text{ titles} & - & M\$60.00 \\
51 - 75 \text{ titles} & - & M\$90.00 \\
76 - 100 \text{ titles} & - & M\$120.00 \\
\end{array}
$$

This service is supported by a back-up photocopy service, see item d)

c) On-demand literature searches

        Based on the resources of the UPM library, manual on-demand literature searches are undertaken. There is a charge of $50 per literature search done. The number of references per search is limited to 30 items. The purpose of this service is to bring to the attention of the user concerned, the existence of a few articles on the chosen topic. It is a starting point which will help the user from them on to search for further references on the same topic. It must be emphasised that it is not the intention of this service to compile a comprehensive bibliography.

d) Photocopy Service

In its efforts to provide the vital document back-up support to its users, the Library would answer requests for photocopies of documents available in its collection. The charge is $2.00 per 10 pages or part thereof inclusive of delivery within Malaysia. For delivery outside Malaysia, the charge is US$2.00 per 10 pages or part thereof. Users on the Library premises can have photocopies made for 5 sen a copy.

With the development of the computer-based bibliographical and referral data base, the following services could be offered:-

e) Selective Dissemination of Information (SDI)

This Service would regularly bring to the attention of a researcher, titles of articles that relate to his special fields of interest. It aims to broaden the expanse of the User's coverage of his subject field by motifying him of sources which normally would not reach him or be known to him.

f) Retrospective literature searching service

In contrast to SDI which deals only with the most current literature, retrospective searching would access the back files of the database as well. Thus, searches may be made using any time frame depending on the needs of the requester, eg. information on pollution of Malaysian waters by factory effluents from 1975 to the present.

g) Referral Service

The Referral File could connect users having questions or problems concerning the environment that cannot be answered by references from the Bibliographic File with the names and addresses of relevant knowledgeable sources which are able to supply the answers or help in solving the problems.

h) Products from the system

The computerized bibliographical data base could produce indexes/bibliographies periodically such as "Malaysian Environment Abstracts", or on special subjects, such as "Heavy metal pollution in Malaysia".

The computerized registers could be used to prepare a variety of printed directories - of experts, institutions, and projects.

i) Newsletter

The production of a newsletter incorporating features mentioned above, such as the contents page service, literature searches, and a bibliography on the Malaysian environment would serve to inform users of developments in their field. Other features normally found in newsletters could also be included. These are a "Diary of forthcoming events", "New books and films", etc.

5. Planning and Management

5a. The Planning Committee

In view of the varied expertise required to establish and maintain the system, it is suggested that there be established a planning committee which would represent the interests of all concerned parties.

Purpose

It would be its responsibility for working out the details of the planning and funding activities. It would also co-ordinate the initial development functions.

Composition

It is recommended the Planning Committee comprise the following members:-

2 representatives from PEPAS.

2 representatives from the Dept. of Environmental Science, UPM.

4 representatives from the Library, UPM

5b. The System Centre

As has been proposed previously, it is suggested that the UPM Library be made the centre of the System and that it be responsible for the development and maintenance of the System.

5c. Consultant

It is recommended that a consultant be assigned to assist in setting up and implementing the system. He/She will develop the design of the EIS for the UPM Library, including the design of software and the design of users' guides.

6. Implementation Phases

It is suggested that the formation of the system be phased out as follows:-

Phase I

a. Establishment of a planning committee for the EIS.

b. Detailed planning for the implementation of the EIS.

c. Establishment of the Bibliographic File.

d. Input of the 1981 Malaysian Environment Abstracts into the computer.

e. Enhancing the Bibliographic File by

      (i)   attempting the comprehensive coverage of Malaysian literature on the environment.

     (ii)   including the literature of WHO's Western Pacific Region.

   (iii)   including the literature of ASEAN not covered by (i) and (ii) above.

f. Establishment of the Referral File.

Phase II

a. Collection of information for the Referral File, and its input into the computer.

b. Planning the establishment of the Data file.

c. Establishment of a network of environmental agencies for purposes of cooperation and resource sharing.

d. Offer existent services of the UPM library to the PEPAS and UPM community.

e. Launch services based on the Bibliographic and Referral Files, eg. SDI service, newsletter, etc. to PEPAS and UPM community.

Phase III

a. Maintenance of the Bibliographic File.

b. Maintenance of the Referral File.

c. Inplementation of the Data File.

d. Extension of services to other users in Malaysia, to WHO's Western Pacific Region and to remaining ASEAN countries.

e. Embarking on publicity and educational campaigns to advertize the existence and use of the system.

f. Evaluation of services of the EIS by conducting a user services survey.

7. **Decisions to be made**

a. Objectives and functions of the EIS

b. Definition and scope of the EIS

c. The System files:-

       The bibliographic file
       The referral file
       The data file
       Computerization.

d. Services and products

       Existing services
       New services and products

e. Planning and management

       The Planning Committee
       The System Centre and Consultant

f. Implementation

Basic Distribution List of
PEPAS Reports and Documents

BASIC DISTRIBUTION LIST OF PEPAS REPORTS AND DOCUMENTS

WHO STAFF

1. WPRO - RD
DPM
DET
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PROPOSALS FOR FUNDING CONSIDERATION

A. Proposal to IRC (POETRI) for the use of POETRI funds allocation to PEPAS

B. Proposal for staff development for SA/PEPAS to engage in the development and execution of standardized PEPAS training courses

C. Proposal for technical visits to potential focal institutions and agencies in the Western Pacific region for establishing the regional linkage and dissemination structure for the PEPAS FNP activities

ANNEX 7-A

PROPOSAL TO POETRI (IRC) FOR THE USE OF
POETRI FUND ALLOCATION TO PEPAS

1. Project identification

1.1 Project title

Pilot study for the establishment of a regional linkage and disemination structure and the operational procedure for the focalized-network information service (FNP) on water supply and sanitation software componets

1.2 Implementing Agencies

Western Pacific Regional Centre for the Promotion of Environmental Planning and Applied Studies (PEPAS)

1.3 Duration

1 year from January through December 1985

1.4 POETRI inputs

Partial defrayment of expenses to undertake a pilot study on the focalized-network information service (see the PEPAS Programme Development document entitled "On the Development of PEPAS Information Service and Information Management Programme and Related Activities - II" for details of the concept of the Focalized Network Information Service Programme (FNP). A brief outline of the concept and the associated conceptual diagrams of FNP are presented as Annex 2 of the said document in the WHO Western Pacific Region with respect to priority subjects in water supply and sanitation software components. The expense items include the costs associated with recruitment of a temporary assistant and overhead costs including the costs of document reproduction, correspondence, and other expenses.

2. Objectives

To establish the linkage and dissemination structure of information most suitable for the Focalized-Network Information Service Programme (FNP) on water supply and sanitation software components to be undertaken as a major-thrust activity of information services offered by PEPAS for the Member States of the WHO Western Pacific Region. Specifically, one of the major objectives of the study is to assess the long-term feasibility and implication of operating FNP as conceptualized in the afore-mentioned project development document by undertaking three pilot projects described briefly in Annex 3. The provision of member countries with POETRI resource materials including the distribution of standard library sets to potential national focal points will be undertaken in connexion with the FNP activities as well as based on findings of FNP activities.

3. Project description

Information exchange and transfer is an activity area recognized by national governments and international agencies as requiring major emphasis for the successful pursuit of IDWSSD. One notable example of such an effort is the Programme for the Promotion of Exchange and Transfer of Information (POETRI) operated by IRC. Despite such an effort by IRC and while there seems to be no one particularly disputing the importance of information exchange and transfer, the expectation that the governments and the international funding agencies could come forward to support information system development at the regional as well as national level has so far turned out to be unfounded, except for a few cases of marginal or qualified success.

The reasons for this somewhat discouraging score may be many. But certainly some. may have a great deal to do with the fact that their ultimate target audience, or specially those working in the water supply and sanitation field in the developing countries, generally do not want information. They want water and sanitation, and, if they could, they would rather get water and sanitation without being bothered about information.

This is not to suggest that the information systems are unnecessary. On the contrary, they are quite necessary. It is only that they have to exist in a far more sophisticated way to be responsive to the user reactions to information. The conventional concept of an information system appears not to have been adequately refined to address the subtle question: how could a system accommodate the information needs of those who do not want information? This is one of the peculairities with which information scientists are challenged to deal in the design of the system configuration in dealing with water supply and sanitation information programmes in the developing countries.

As a technical collaboration centre of the WHO Western Pacific Region, PEPAS has a mandate to play a significant role in regional information exchange and transfer not only in the water and sanitation field but also in many of the other environmental health subject areas.

In the process of conceptualizing an information system which could be integrated into the scope of activities and the scale of operation of the PEPAS technical collaboration programme, it was of critical importance to recognize this peculiarity and give a realistic assessment of the chances of success (in terms of producing measurable impacts on the quality of informational products produced by the Member States) of implementing such an activity prior to embarking upon the actual implementation.

The Focalized-Network Information Service Programme (FNP) as proposed in the aforementioned document is one attempt to take into account this peculiarity. It may be regarded as an active and intensive information programme with a very limited number of target audiences or partners. The output of the programme is a priori specified very precisely and the programme activities are terminated upon fulfilment of the original target objective or upon completion of the mandated mission. The target audience or partners will then be either regrouped into another focalized network or into the body general target audience with which PEPAS maintains regular informational contact for potential future involvements in the focalized network activities.

Each of the three pilot projects proposed, namely:

(1)   Malaysian National Drinking Water Quality Surveillance Programme;

(2)   UNDP/WHO Decade Advisory Project which aims at producing planning guidelines for community water supply and sanitation; and

(3)   the WHO Western Pacific Region Environmental Health Field Staff Network

has specific project features which make the focalized network activities somewhat different from the other two. By implementing these three pilot projects the practicability of the focalized network concept could be properly assessed and insight could be gained into the ways the concept could be further refined for future routine implementation.

Because the central activities at PEPAS are expected to involve a great deal of information management for system accommodation, a few data-base development softwares would have to be prepared during this pilot project phase. Existing POETRI resource materials including the standard library kit distributed to PEPAS will be utilized to the best advantage.

The project description including the background, major points of interest to PEPAS, proposed major topics of analysis and possible problems and constraints are presented in Annex 2 with diagrams describing the potential focalized network configurations.

3.2   Project justification

PEPAS has confirmed that it will collaborate with IRC in the implementation of POETRI by accepting the role of the POETRI regional focal point in the Western Pacific Region. PEPAS, therefore, will take part in the regional POETRI activities and will contribute to the strengthening of national capabilities in information management and to the enhancement of regional as well as global information on water supply and sanitation subjects.

PEPAS, however, does not consider the underlying philosophy which led to the conventional design of information service and information management as particularly applicable to the functional structure and the mode of operation of PEPAS nor for that matter to a great number of the national environmental health agencies in the region, partially because of its inadequacy in dealing with the afore-mentioned peculiarity.

The Focalized Network Concept has been developed taking into account the lack of specificity of the conventional concept of information system development. While it is at this point only a conceptual proposal, the Focalized Network Information Service Programme may well complement the existing realm of information activities particularly with respect to those related to IDWSSD component subjects. Therefore, it is proposed that the concept be tested for its practicability, and, if proven as a viable complement to the conventional approach, the FNP be adopted as an additional POETRI tool in the Western Pacific Region with suitable refinements in the concept and the operational procedures based on the pilot project study.

3.3 Financial Support Requested

The total estimated budget, PEPAS expenses and the requested inputs from IRC (POETRI), all for 1985, are as follows:

PEPAS/ESE	6 man-months totally covered by WHO (PEPAS)
PEPAS/SA	4 man-months totally covered by WHO (PEPAS)
PEPAS/SEC	4 man-months totally covered by WHO (PEPAS)
TA to be recruited	Approximately 8 man-months covered by POETRI (Approximately US$6,000 - or Dfl 18,000), the remainder to make up to a total of 12 man-months to be covered by PEPAS

∴ 1200-1500/ us months

local person.

local, hard task. clearing -

→ Requires Manila clearance.

PROPOSAL FOR THE REINFORCEMENT OF PEPAS STAFF
TO ENGAGE IN INFORMATION SERVICE
AND INFORMATION MANAGEMENT ACTIVITIES

Background

PEPAS has been maintaining a relatively modest information programme
to support its mainstream technical collaboration activities since its
inception in 1979. Although designed primarily to serve the PEPAS
internal information needs and to respond to occasional information
requests from PEPAS contacts within and outside WHO operations and looked
after only by a technical assistant on a part-time basis the programme has
made some significant improvements over the past few years including a
greatly increased number of document holdings which have been categorized
in accordance with a PEPAS-devised classification.

The current information support activities, however, will have to be
greatly intensified and diversified as PEPAS technical collaboration
activities become further intensified and diversified in the years ahead,
and particularly as PEPAS begins to employ more sophisticated programme
development and programme management approaches including the approach
currently being conceptualized as the Focalized Network Information
Service Programme (FNP) which is intended to integrate information
components nearly totally into technical collaboration activities (For
details of FNP see a document entitled "On the Development of PEPAS
Information Service and Information Management Programmes and Related
Activity-II: the Focalized Network Information Service Programme").

The operationalization of FNP concept, yet to be tested, taking three
pilot projects in 1985, on water supply and sanitation subjects, requires
manpower which would be devoted to undertaking both the central
information processing (CIP) activities and FNP network facilitation in
collaboration with existing staff.

A proposal has already been prepared to be submitted to IRC (POETRI)
that the execution of the three pilot projects may be undertaken, in

addition to redirecting the existing PEPAS manpower, by the recruitment of
an additional temporary technical assistant with the POETRI financial
provisions. This, however, is only a temporary measure to be properly
followed up before the funds get exhausted.

Manpower reinforcement plan

The attached table shows the proposed sequence of manpower
involvement in undertaking the FNP and CIP activities. It is to be noted
that the Special Assistant (SA) currently engaged part-time in the
provision of information service activities within PEPAS is expected to be
gradually taking on a more technically demanding role of developing the
PEPAS training resource programme.

Proposed action

It is quite important at this point that PEPAS and WPRO review the
outlook of PEPAS manpower reinforcement. While PEPAS was set up with the
Malaysian Government agreeing to defray part of the local support costs
including the expenses involved in recruiting of secretarial and other
suppor staff, there is no reason to believe that the Government will
favourably consider toward contributing further to a manpower
reinforcement plan such as the one proposed herein. Thus the funds will
have to come either from WHO regular budget or from extrabudgetary sources.

It is therefore most desirable that decisions be made expeditiously
between PEPAS and WPRO on the following major points which will make clear
the future courses of action and the necessary preparations:

A.   Realistic assessment of the manpower reinforcement plan as
     stipulated under the Manpower Reinforcement Plan section of this
     proposal

B.   Identification of possible sources of funds potentially interested
     in supporting the plan including WHO internal provisions

C.   Recommended action to be taken by PEPAS

D.   Suggested contingency plan in case no funding possibilities appear
     to exist

Scenario		January - December 1985	January - December 1986	January - December 1987
1. Manpower Situation				
Existing Staff	ESE	- full time involvement	- heavy involvement in document consolidation and information service activities	- advisory involvement
	SA	- leave from Oct.84 to Feb.85(a temporary replacement needed) - to attend a short course in effective methods for operating training courses	- same as above - training resource development activities	- document consolidation activities - training resource development activities
other staff		- casual involvement (some change over also expected)	- document consolidation in areas of speciality	- document consolidation in areas of speciality
Staff Addition and Cost		- recruitment of a temporary technical assistant to help implement three pilot projects (POETRI funds)	- recruitment of a documentation specialist to assist SA (information programme officer = IFO)	- recruitment of a secretary to assist SA and IFO

PROPOSAL FOR TECHNICAL VISITS TO POTENTIAL FOCAL
INSTITUTIONS AND AGENCIES IN THE WP REGION TO
ESTABLISH THE REGIONAL LINKAGE AND DISSEMINATION STRUCTURE
FOR PEPAS FNP ACTIVITIES

The FNP activities will be carried out in the first year for three
pilot project networks with a view to determining the operational
logistics of FNP and to identify possible linkage and dissemination
structures of information for various FNP activities. The operational and
conceptual shortcomings will have to be identified and the necessary
modifications will have to be made to ensure the FNP is a viable and
sustainable programme.

While a great deal could probably be learned about the reactions of
the participating members through correspondence made over a period of one
year, the extrapolation of the findings of the pilot projcts directly to a
large number of possible target audience in the entire WP Region could be
quite difficult without making personal contacts with many of the
resourceful existing and potential focalized-network members. By the time
the pilot projects have been carried out for nearly one year the target
outputs would be about to shape up and the viability of the FNP
actitvities is likely to be established. It is at this point that
technical visits could be made to selected but key national and regional
agencies and institutions to seek their views on the contribution of FNP
to their respective information programmes. The likely outputs of these
visits will be

(i)   identification of the linkage and dissemination structures of
        information in accordance with the subject areas of FNP activities;

(ii)   identificaton of subject areas in which further FNP activities may
        be usefully undertaken;

(iii)   identification of complementary activity areas between the
        informational activities of the agencies/institutions and those of
        PEPAS FNP;

(iv)   Development of a strategy to seek additional extrabudgetary
         funding for FNP activities.

The technical visits would be undertaken possibly in late 1985
using PEPAS funds either by a PEPAS staff member or an individual who is
quite familar with the concept and operations of FNP who could be
recurited as a STC.