

**STEPS TOWARD THE DESIGN OF A MONITORING AND  
EVALUATION COMPONENT FOR THE VILLAGE FAMILY  
PLANNING/MOTHER-CHILD WELFARE (VFP/MCW)  
PROGRAM**

March, 1986

Submitted to Office of Population & Health USAID/Jakarta

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## INTRODUCTION

The principal purpose of this consultancy is to provide tentative recommendations on appropriate activities for the evaluation, research and monitoring components of the Village Family Planning/Mother Child Welfare (VFP/MCW) amendment. This task should be viewed in the broader context of the overall project and the proposed amendment. Just as the amendment builds upon and extends the VFP/MCW project, so should the evaluation, research and monitoring components build upon past work.

At this time a unique opportunity is available to BKKBN. A substantial effort evaluating the program activities of the past several years is now in the final stages. Much has already been learned and the next several months will yield further results having considerable policy and operational implications. The evaluation research was designed from the onset to accomplish the objectives of program evaluation and to have the potential for becoming the first stage in designing and implementing a built-in ongoing monitoring and evaluation system. With the decision to proceed on the three year amendment, this potential can be realized.

The following report is organized into three major sections. The first section presents the overall goals and the categories of activities to be carried out under the amendment's evaluation, research and monitoring components. Section 2 describes the overall program context and identifies issues that are surfacing in the current evaluation research program and accompanying determinant studies as topics on which future work will be built, and section 3 provides the overall plan for accomplishing the goals of the project amendment.

## 1: GOALS AND SUGGESTED ACTIVITIES UNDER THE VFP/MCW PROJECT

The first consideration is to assess the extent to which the design of ongoing evaluation research and monitoring activities can be expanded and/or modified for the project evaluation and monitoring component of the VFP/MCW project amendment. There are several interrelated goals and consequent activities which could be carried out under the VFP/MCW Project Amendment. Figure 1 is a schematic portraying the relationship among these activities. First, based upon the current evaluation research program (Box 0, Figure 1), there will be several KB-GIZI program variations which show promise of improved performance as implemented under the new *pos yandu* scheme (Box 1, Figure 1). Under the project amendment these variations would be implemented in the three provinces currently covered by the project (East Java, Bali and Lombok) and another one (Central Java) not currently covered. Based upon preliminary findings it is possible that more than one program variation would be appropriate depending upon the local conditions existing at the implementation site. Fulfilling the above goal would be achieved when each of these program variations had been evaluated for practicality and effectiveness at the end of the amendment period. These operational research studies would be facilitated by the M & E system to be described in the following paragraphs.

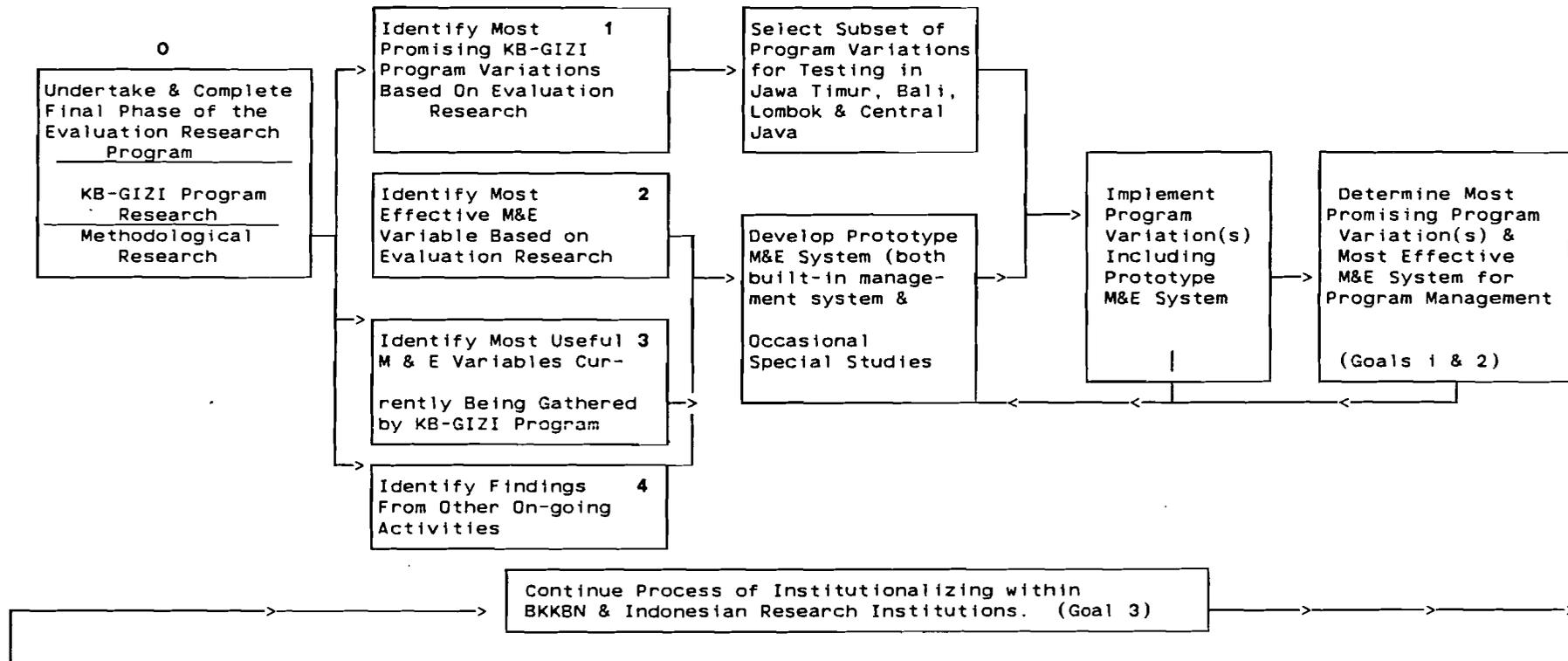
The second and interrelated goal is the development of a management-oriented monitoring and evaluation system (Box 2, Figure 1). The current evaluation research program includes use of a the very comprehensive household behavior and community profile survey instrument. Data which have been gathered in this system are presently undergoing intensive analysis by several different research teams. These teams will converge this June for a final joint endeavor leading to the publication of a series of reports on findings. A seminar is scheduled for disseminating these research results during the week of September 22, 1986.<sup>1</sup> While data gathered during this research is comprehensive (over 900 separate variable fields), one of the principal benefits is expected to be the ability to select a subset of key variables which does a reasonable job of portraying the program setting, program characteristics and various process and outcome indicators. Several analytic methodologies will be used to identify these key variables which then can become candidates for inclusion in an emerging built-in monitoring and evaluation system.

Another source of input to the design of an M & E system are data that are currently being gathered on an ongoing basis by BKKBN (Box 3, Figure 1). These data include both the SKDN system and process indicators for personnel activity and supply

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<sup>1</sup> For a complete description of the BKKBN KB-GIZI evaluation-research program see Working Document Series Numbers 1-15. Working Document 16 presents initial findings and a timetable of tasks to be undertaken between February and September 1986.

FIGURE 1  
 SCHEMATIC PORTRAYING VFP/MCW AMENDMENT GOALS AND CATEGORIES OF ACTIVITY



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disbursements. The final sources of input to the design of an M & E system are findings from other related research endeavors. Professor Jere Haas and his colleagues have been working on sources of misclassification which should help define both data gathering and interpretation. Alma Kern and her associates have embarked upon an evaluation of the income generating scheme in East Java. These and other analyses should go far in helping to provide the initial specification of the M & E system which then would be trial tested and improved upon during the time period covered by the amendment (Box 4, Figure 1).

It is suggested that a limited second wave of the existing comprehensive household behavior and community profile surveys be implemented in all provinces covered by the project amendment. This second wave could await the beginning of the second year of the amendment. The reason for this task is twofold. First, if properly time sequenced, it will provide seasonal information on crops, morbidity and other seasonally affected variables. Second, it will permit longitudinal analysis of the settings in which the prototype M & E system is being implemented. This limited parallel endeavor will provide an additional "ground truth" of the M & E system and facilitate selection of the most powerful predictive variables. Because this second wave of interviewing is limited and uses survey instruments already developed, the task can be made considerably less burdensome than the original surveys. Data entry, cleaning and longitudinal analysis all will be simplified by utilizing existing database management systems and data manipulation protocol.

The third and perhaps most important goal for the VFP/MCW amendment is the continuation of the institutionalization within BKKBN and the Indonesian Research Community of the methodologies developed and utilized in this program. Some institutionalization has already begun. From the onset of the current evaluation research program all elements of the project, with few exceptions, have been worked on jointly by both U.S. and Indonesian researchers. For those elements which required initial implementation elsewhere, such as with some of the software development, the research team participants will be trained this summer in their use. However, the full institutionalizing of both evaluation methodologies and M & E design and implementation will only occur during the three year period covered by the amendment. Happily, there are some other necessary components such as the introduction of more computational capability within BKKBN which is planned to occur coincidental to the amendment. With proper coordination and careful specification of both hardware and software, the emerging project evaluation, research and monitoring activities will be able to not only utilize this equipment but, in fact, contribute major components of the computer management plan so necessary for effective computer utilization.

Of course, one of the most important mechanisms for institutionalizing the methodologies and activities undertaken during the amendment is having counterparts within BKKBN working with the technical advisors to this program. There are several alternatives which could be utilized such as having a full time technical advisor on-site in Jakarta working with a counterpart in BKKBN and/or DEPKAS. Another alternative would be for the advisor to interface primarily with one of the university research institutions such as Fakultas Kesehatan Masyarakat, which, in turn, would interact with the appropriate governmental units. Each alternative has its strengths and weaknesses but suffer from the same problem—personnel turnover. Whenever the key link person either resigns or shifts to another job much of the institutionalizing is lost. For this reason we suggest a somewhat different strategy in handling counterpart staff. Instead of only two counterpart staff, one with BKKBN and one assigned to the technical advisor, it is suggested that redundancy be built into both organization. At least two and perhaps three staff from the technical advisory organization could be linked with a similar number of staff in BKKBN. In order to ensure the opportunity for BKKBN staff to devote undivided attention to the project it might be helpful to provide salary to counterpart staff from the project with an understanding that at the end of the amendment, these staff would continue on with BKKBN funding. It is also suggested the FKN or another local University-based research institution be funded to work jointly in all phases of the technical assistance effort. Thus, at the end of the project, there will be a cadre of BKKBN and local university based staff fully trained in all aspects of the program.

The research, evaluation and monitoring activities to be carried out during the amendment period would consist of (a) implementing several program variations and (b) prototype M & E systems at different locations and by evaluating their performance and monitoring protocols as dictated by the results during the course of the amendment. The evaluations would result in specifications for program and information systems whichh reflect accommodation to program characteristics and to environmental and social context. This process of reflective design is indicated by the feedback links connecting to boxes on the right hand side of Figure 1.

## 2: BACKGROUND FOR MONITORING AND EVALUATION DESIGN

This section provides a context from which to view the general family planning/maternal and child health programs of the government and identifies issues that have surfaced in the current evaluation project that appear to be important concerns in the implementation of program variations under the project amendment. Twenty-two issues are identified. They are not all susceptible to monitoring in some direct and practical way. Some can be monitored. Others will require periodic special analyses. The underlying purpose of both monitoring and special evaluation built into the ongoing program is to judge the progress of the program in terms of both outcome and operations. The issues identified here are the result of preliminary findings from the current evaluation research. Their descriptions may change in the final report and other issues may also be identified and included in the final report.

### 2.1 Community Level Family Planning, Health and Nutrition Programs

Government efforts to help move Indonesian society towards its goal of the small, healthy and prosperous families are directed at the level of the individual family and especially focus on mothers and their children under five years of age (balita). The objectives are to reduce infant and child mortality and morbidity, to encourage couples to have no more than two children and to improve the resource base of the household. The Village Family Planning and Mother/Child Welfare program is designed to improve preventative health care through integrated provision of five basic services: immunization, diarrheal disease control, nutrition, maternal and child health and family planning. The primary means for supplying these services is through the activities of the *pos yandu* operated by community volunteers *kader* and supported by health personnel working at or through the health centers *puskesmas* and the PLKB, the family planning coordinator who is a paid BKKBN community level worker.

Community participation and support is essential to these activities because of the need to rely on volunteer work and local resources to some degree and because people are more likely to participate in a program that involves familiar community members. For these reasons the government supports community self-sufficiency efforts. In addition, the government maintains the *puskesmas*, supports the PLKB, provides training for the *kader* and village leaders and supplies medical, family planning, educational and other materials in support of the program components.

**Monitoring and Evaluation.** A monitoring and evaluation system is needed to measure status of health, nutrition and family planning and to assess program effectiveness and operations. The dynamics of household and community behavior are complex. Several issues and strategies need to be addressed in the design of a monitoring and evaluation

system used to observe these activities. Mothers' participation in the *pos yandu* activities is a necessary condition for success. The determinants of the participation must be identified and monitored. Program effectiveness depends upon program characteristics such as timing and intensity and upon *kader* effectiveness. The latter depends upon who are recruited to be *kader*, what incentives they are given to volunteer and to remain active, and what training and support they receive. Community participation depends upon the interest and activities of community leaders and on the extent to which the community achieves self-sufficiency in running the health, nutrition and family planning programs.

The information needed to evaluate these programs is derived continuously from program operations or acquired periodically in special investigations. The information must be processed and accumulated in a fashion that makes it available for program managers to use in decision making, that is, it must be timely, accessible and accurate. At the same time a management information system meets these requirements it must operate at lowest possible cost and effort because only a small proportion of program funds will be available for gathering and processing information. This calls for careful design and experimentation in implementation. There are many aspects to the program which require attention in the design of a monitoring and evaluation protocol. We discuss them below under the general titles of (1) participation by mothers, (2) program effectiveness, especially *kader* effectiveness, and (3) community participation.

## **2.2 Participation of Mothers in Pos Yandu Activities**

We base our expectations of the behavior of mothers on a theory of child care which depends upon the existence of a strong mother-child bond. We assume she does the best for her child as she understands it, and has the resources to act. Further she depends, in part, on help from other members of the family and on community services and protection. The program can reach her directly by changing her understanding and outlook toward family and child or by providing her with new or additional resources. The program may also reach her indirectly through community level efforts which make child welfare a community priority or, more remotely, by improving community infrastructure and resource base.

The government has decided to reach the mother through *pos yandu* activities. It must therefore make the benefits of bringing a child to the post outweigh the trouble and effort in attending and, in addition, the benefits in attending must outweigh the opportunity lost for doing some other activity. A mother's commitment to participate is the result of a rather complicated calculus on her part in which we can expect the outcome

to vary from situation to situation.

- (1) **What are the benefits of bringing balita to weighing post activities as perceived by mothers?** A mother must see the benefit in attending weighing sessions. She may value the pos yandu as a source of materials, an access to services, a source of advice and information and a place of participation in which she gains status or reassurance about her child care behavior from her friends, community members or authority figures. Her values and expectations about these activities depend upon her education, exposure to program messages and cultural conditioning. By cultural conditioning we refer to influences on her by her husband, other family members or community members such as formal and informal community leaders. Outside influences may also be present through public media and exposure at work if she is employed outside of the home.
- (2) **How can participation best be measured?** Participation in the nutrition program is measured by coverage and attendance. Coverage is the percent of eligible people identified and enrolled in a program. Attendance is a measure of the frequency of use of the services. The SKDN monitoring system is intended to reveal the level of participation in the nutrition program. (S is the number of balita in the community; K, the number enrolled in program; D, the number attending weighing last month; N, the number gaining weight over their weight of the previous month.) The household behavior study currently underway can be used to evaluate the SKDN system in East Java and Bali. This survey contained independent estimates of SKD (not N) along with a review of SKDN records. Considerable discrepancy exists, for example, while the ratio K/S was reported to be above 95% in Bali, the survey yields a ratio of around 60%.
- (3) **By what means can participation be verified in a monitoring system?** Monitoring participation remains a program need, but new strategies in data gathering and interpretation are called for. For example, S and K might be linked to number of couples eligible for contraceptive use in the community. An association should exist between these variables. A trend in the expected direction could signal a long term program effect. If the relationship is unstable in data accumulated over time, the comparison could serve as a warning regarding accuracy of reports. Analysis of household behavior data can be used to determine how feasible it is to use this link as a monitoring device. Other approaches to verifying attendance may also be explored using other variables in the evaluation study.

- (4) **What is the reason for frequent and continuous participation in pos yandu?**  
 The benefits of weighing balita each month are in the assurance that the child is on the "road to health" as shown on the KMS card and the identification and referral of an at-risk child to the puskesmas for special attention. Referral is not usually necessary and therefore does not happen often. The continuing motive that prompts the mothers to attend regularly must be the value attached to the attention given by the kader or to the opinion and/or advice given to her by others at the pos yandu regarding her balita. Information about the purpose of the weighing, the value of the KMS record and the nutritional messages require continual attention at the pos yandu because new mothers are constantly entering and continuing mothers need reinforcing. If reassurance about her child's nutritional status is the primary reason for a mother to participate in the nutritional component of pos yandu then it is desirable that the mother value kader opinion about nutritional matters, receive instruction regarding the KMS card, and so forth. The household behavior survey queried the respondents about their level of knowledge and attitudes toward nutrition and their source of information. The answer was that mothers prefer authority figures such as PLKB or puskesmas personnel to kader as the source for most advice. Little instruction appears to be given at weighing sessions according to the results reported in determinant studies. About one-third of participating mothers did not have a KMS card in their possession and could therefore derive no value from a record of their child's performance. The perceived value of coming to the weighing post for nutritional advantages does not seem strong.
- (5) **What are the costs and efforts associated with participation in pos yandu?**  
 Against the values gained, one must balance the trouble and effort associated with attending weighing sessions. Again, the household behavior study reveals data on distance and time spent coming to the weighing posts and attitudes regarding bringing very young, sick or older, boisterous children or more than one balita to the weighings.
- (6) **How can program activities reduce the problems associated with participation?**  
 Program operations must be made as informative, pleasant, convenient and reassuring as possible to overcome the effort in attending. The kader have a little control over some of these variables. The determinant studies indicated that having something to feed the balita helped keep them quiet and made the weighing activity more pleasant. This seems of more value than any nutritional or demonstrational value in serving food at the weighing. Presumably this has an effect on participation by reducing the trouble in

attending.

- (7) **Are there threshold and intensity effects in the scheduling and location of weighing activities?** Regularly scheduled weighing, with notification well in advance and at convenient hours are characteristics which help overcome the opportunity costs associated with weighing sessions. Harvest time, special community or household ceremonies and regular work outside the home are very competitive reasons for not attending a weighing session. The time away from home may reach a threshold after which attendance falls. This has policy implications regarding number and spacing of weighing posts in a community. It also influences the number of activities that can be effectively pursued at a weighing session. A balance must be found between the number of activities provided at a post, whose benefits are additive, against added confusion and time required which detracts from the experience. An evaluation of attendance as a function of the number and level of pos yandu activities could address the issue of this balance.

The above remarks only address mothers' participation in nutritional activities of the pos yandu. They require identifying the benefits to the mothers in attending, the effort associated with doing so, and the loss of opportunity to do other things by time committed to the weighing. The other four program purposes would also be judged in a similar manner.

- (8) **Is there effective delivery of maternal and child care benefits in the pos yandu program?** Maternal and child health refer to pre-natal care, tetanus shots, iron folate tablets, vitamin A tablets, instructions and advice on breast-feeding and weaning practices. The value of these services is a combination of materials such as the injections and tablets, services, and screening for referral, education and assurances. The evaluation question is whether or not these materials and care are best provided at the pos yandu or elsewhere, or delivered through home visits. Even if other channels are used they may reinforce or may be reinforced by pos yandu activities.
- (9) **In what ways do pos yandu activities contribute to immunization services?**
- (10) **In what ways do pos yandu activities contribute to diarrheal disease control?** Immunization and control of diarrheal diseases both require dispensing of materials and educational activities to make mothers aware of the issues and to take proper action. The pos yandu is useful but not unique as a channel for these activities as well.
- (11) **Has integration of program messages made the pos yandu a first source of aid**

in matters of child health, nutrition or family planning? The expected value of the integrated approach is that mothers will learn to turn to the **pos yandu** for all child health care related matters as a first step in seeking advice and help. Periodic special surveys assessing the knowledge, attitudes and practice of mothers should be used to make inquiries regarding first source of information about health nutrition and family planning in order to judge how well the **pos yandu** is identified as such a resource.

- (12) **How should the program respond to local variations in environment and background conditions?** The program has little control over many attributes of mothers and their circumstances that affect their calculus of attendance. Social status, economic status, level of education and literacy and degree of outside work opportunities are likely to be determining factors. If they are controlling factors, the strategy open to the program is to modify program content to accommodate the circumstances. A special urban policy may be in order if locales are found where there is wage employment opportunities for young women due to an urban setting.. A different schedule for the day for post activities might change opportunity costs in attending. Program modifications of this sort require decisions based on monitoring and evaluation made at local levels.

### 2.3 Program Characteristics

The ultimate outcomes of program activities derive from household behavior. These include variables such as age of mother at the time of her first child, child spacing, nutritional status of children, morbidity condition of children and infant and child mortality. Household behavior, in turn, is a consequence of the knowledge and attitudes of household members and the resources available to them which they are willing to commit to these purposes. The program activities can affect knowledge and attitude of mothers and other household members and provide some resources such as family planning and health materials. Several factors contribute to program effectiveness. These include the intensity of program applications and any threshold effect dependent on level of application, the logistics of material supplies, location, schedule and announcement of activities, reliability of service and activities, training, supervision and support of volunteers.

Data on these factors have been obtained in the household behavior survey. The nature of the household behavior variables and the strength of the links between them are to be assessed in the analysis of these data in Ann Arbor during the summer of 1986. Recommendations regarding variables to be used in the monitoring and evaluation system

will be forthcoming from this analysis. In addition, the current BKKBN reporting system adopted in April 1985, through which data are already being collected on a regular basis, is assumed to be the major source of information. The household behavior analysis will link these data, which are already being collected on a regular basis, to the household behavior and ultimately to the outcome variables. Some special evaluation efforts may be scheduled from time to time to fill in data on a sample basis necessary to make the links between program performance and outcome variables that are not ordinarily part of the monitoring system. Recommendations for adding certain variables to the regular monitoring system may also be made as deemed appropriate and feasible.

### 2.3.1 Intensity and Threshold Program Activities

- (13) What are effects of threshold and intensity factors on program effectiveness? Intensity of program application is described by number of balita per kader, number kader per PLKB, number of pos yandu per desa or per household. The determinant studies on kader effectiveness indicated that smaller posts, with fewer than twelve balita achieved very good attendance records. No more than two kader would handle such small posts. Large desa must possess several sets of weighing scales, educational posters, record books and other material to operate weighing posts. These requirements may exceed the material provided by BKKBN, and local resources may be needed for full program operation.

Attendance may be good in small posts but the quality of activities may not be adequate especially for the integrated activities of the pos yandu where health personnel are supposed to be present to provide for immunization and other health care requiring paramedical personnel. There may be a threshold effect. At least five kader are required to man the four table weighing post system (two required for weighing the balita). If less kader than five are available the last table where instruction and advice are given is usually not active. This reduces the value of participation by mothers.

- (14) How does PLKB activity level affect program effectiveness? Another intensity of program application has to do with the number of kader and/or posts under the responsibility of a single PLKB. Active supervision and repeated instructions to the kader are needed for education messages to get through to mothers. If the PLKB has so many weighing posts and kader under his or her administration that contact is infrequent, the program will be less effective. These figures can be monitored in the monthly reports to BKKBN kabupaten level.

### 2.3.2 Location, Schedule and Announcement

- (15) Have there been any useful variations in the local, scheduling or announcement of pos yandu activities? Location, schedule and announcement of the pos yandu activities influence effectiveness as discussed in the mothers' participation section above. The household behavior survey permits analysis of these factors under different social-economic conditions of the households. A simple follow-on sample survey to determine what adjustments in location and schedule and what variations exist in the methods used to announce the activities have been made to improve performance. Some of these experiences may yield policy recommendations that could be shared throughout the program.

### 2.3.3 Logistics

- (16) How should material flows be monitored for use as indicators of program effectiveness? A major appeal of the program is that certain materials are available and distributed to recipients. These include iron folate, and vitamin A tablets, contraceptive materials, and immunization doses in various forms. There are also post-level supplies such as instructional manuals, posters and flip-charts. Weighing instruments and record books are usually purchased locally. The monitoring and evaluation system should keep track of the logistics system supplying these materials. The determinant studies and the household behavior data reveal uneven supplies of these goods. Recommendations for how to monitor the logistical system and what action to take in circumstances where supply is faulty should be developed as part of the monitoring and evaluation design.

### 2.3.4 Cooperation at Desa Level

- (17) How is integrated provision of family services more effective and/or efficient than separate provision of services? The major premise of the pos yandu system is that integrated family service provisions will be more effective and efficient than the separate provision of services. This premise needs to be repeatedly evaluated. The strength of DEPKES is the presence of medically trained personnel at the puskesmas. The strength of BKKBN is the presence of the BLKB and the mobilization of community volunteers and close contact with community leaders. Pooling resources and making them available in specific places and times, sharing education materials and providing joint messages and combining record keeping and reporting are the elements of desa level coordination. Special sample evaluations of the nature of this cooperation at desa level should be made during the course of the monitoring and evaluation

implementation to generate specific recommendations on cooperation.

### 2.3.5 Training

- (18) **How effective is kader training?** The determinant studies on kader effectiveness revealed a lack of confidence on the part of kader in giving nutritional and health advice to mothers due to lack of kader training. Usually kader had been trained but the training sessions were very brief and training materials lacking. The educational component of the pos yandu is of primary importance and may not be getting the attention it requires because of lack of confidence by the kader. Improved training, supervision and repeated instruction by the PLKB are means for improving kader effectiveness. The household behavior study provides some cross-sectional analysis of the link between level of supervision, amount of training and kader effectiveness in terms of mothers citing them as a source of information and mother attendance.
- (19) **How can information, communications, delivery and education be improved?** Training of kader and transfer of information to mothers would benefit by wider availability of training manuals, flip-charts, and posters. Effectiveness might also be expected to improve if such material reflected local cultural characteristics such as language and dress. Sample evaluation of kader knowledge and availability of materials is recommended as a crucial program characteristic.

### 2.4 Community Participation

- (20) **How does the choice and status of kader influence kader effectiveness?** Pos yandu depends upon a degree of volunteerism and local community support. The key element is the quality of the kader. The mothers should look to the kader as a source of information, advice, assurance and aid. The status as well as the training of the kader contributes to making him or her an acceptable source of such exchange. A kader who is literate, married, with children, older, and an established member of the community will bring status to the position. The problem is to obtain the commitment of the village leadership to value the program highly enough to appoint persons of status to be kader and to provide the position with sufficient reward and honor such as to be attractive to a person of status. The household behavior survey may be used to assess the various approaches taken in choice of kader. Recommendations for kader characteristics will be derived from this analysis. These data will help develop an approach to village leadership regarding the type of person that makes the most successful kader.

#### 2.4.1 Reward System

- (21) What are the best methods for rewarding kader participation? The determinant studies on kader training and effectiveness indicate that some level of reward or recognition is prerequisite for recruiting effective kader and having them remain active. Some communities provide uniforms. The suggestion is made that the kader should receive free medical treatment at the *puskesmas*. A small fee paid to the kader may also be possible if the community is successful in an income generating scheme. A canvas of *desa* to discover the system of rewards that have been devised should be conducted periodically and the results shared with all PLKB and village leaders as suggestions for improving community participation.

#### 2.3.2 Self-sufficiency

- (22) How do income generating activities contribute to *pos yandu* effectiveness? Community self-sufficiency is part of community participation. In addition to attracting high quality kader, communities may make *pos yandu* more effective by providing financial support to purchase supplies or provide food for *balita* during *pos yandu* activities. Of the various income generating schemes that have been tried, the saving and loan groups, P2K (East Java), now called UPPK, and expanded nationwide is the most developed.

This activity has several purposes. Any evaluation of it must consider this multiple-purpose nature. A primary consequence is the identification and commitment of community effort focused on family planning and maternal and child health. The UPPK provides a service to community members as a source of small loans. It generates funds to support *pos yandu* activities and possibly supplies a small fee for kader. It provides new status to women's groups in that they are managing a capital fund. It builds *desa*-level institutional contact with government agencies and the BNI (Bank Negara Indonesia). The UPPK coordinator must be literate and capable of maintaining the financial records and managing loan negotiations. She is essentially a volunteer because the fee she receives does not amount to even a minimum salary. She is likely to have a reasonably high status in the village. Her participation is a benefit to the program with respect to community participation in *pos yandu*.

The UPPK lends itself to monitoring because by its nature it contains analytical variables that are reported monthly to *kabupaten* level and to BKKBN *pusat*. These can be taken as measures of program operations but

also as indicators of the state of community participation. Variations in activities of the UPPK should trigger action at **kabupaten** level. The design of the monitoring and evaluation system will address the dynamics of the income-generating program to suggest which variables and levels should be used to initiate investigation and action.

### 3: PLAN OF IMPLEMENTATION

The plan for implementing the project evaluation and monitoring components of the project amendment consists of two main elements: (1) the administrative arrangements and sequencing of follow-up technical assistance over the life-of-project and (2) an assessment of current conditions on which this technical assistance should be based. We begin with the assessment of current capabilities. Four areas of technical capability are central to project monitoring and evaluation: (1) existing project evaluation and monitoring activities, (2) the usability of the current built-in monitoring system (SKDN), (3) existing provincial research capabilities, and (4) computer hardware/software resources available for use in project monitoring and evaluation. Major portions of sections 1 and 2 of this report presented an assessment of the expected capabilities of the evaluation research project currently underway. Therefore, the ensuing sections deal with the remaining three areas of technical capability in the order presented above.

#### 3.1 Utilizing the SKDN Monitoring System

Much has been written about the SKDN monitoring system and at present others are currently conducting research on its efficiency.<sup>2</sup> It is not the purpose here to review that literature but rather to focus upon usefulness of the SKDN system for assisting in the evaluation of program management and effectiveness.

In the current evaluation research program SKDN data were gathered at the community level. Sample statistics therefore can be compared with banjar/dukuh and desa data statistics which have been forwarded to BKKBN as part of its reporting and recording system. Finally, for a subset of the household sample, those possessing KMS cards, SKD (not N) data were observed. It is expected that one of the aspects of study during the final phase of the evaluation research program will be a comparison of the similarities and divergences between sources of SKDN data. The sample of ibu balita who possess cards represents a smaller group than all ibu balita who report having weighed their balita and therefore contains an as-yet-unknown bias. At present we compare the ratio K/S as reported by BKKBN with a computed value for K/S based on whether an ibu balita reported ever weighing her child. Table 3-1 presents the range and sample means for both Bali and the ten kabupaten in East Java covered by the KB-GIZI

<sup>2</sup>Sahn, David (1983), Expanding the National Nutrition Program in Lombok, Indonesia: Recommendations for Program Planning and Policy Making. CSF83.5, Community Systems Foundation, Ann Arbor, Michigan. Drake, William D. (1982). Improvements in Methodology for Evaluating the Nutritional Impact of Mother Child Welfare/Family Planning Project, Indonesia CSF82.5, Community Systems Foundation, Ann Arbor, Michigan. Phillips, James F. (July 1983), An Overview of the Information System of the Indonesian National Family Planning Coordinating Board: Options for System Changes and Development, American Public Health Association, Washington D.C.

program. The divergence between the two sources of data is large and of possible policy relevance. During the amendment some effort should be supported to try experiments on how to improve the accuracy of reporting SKD information. A number of previous reports have commented on the deficiencies of the N as currently defined as weight gained over the previous month, as an indicator for monitoring program outcome. Effort should be given during the amendment to identifying and testing alternative indicators of balita growth.

TABLE 3-1

K/S RATIOS AS REPORTED/ESTIMATED BY REPORTING AND RECORDING SYSTEM, COMMUNITY PROFILE AND HOUSEHOLD BEHAVIOR SAMPLE

Province	K/S, Reported by Reporting & Recording System (BKKBN)	K/S, Reported in Community Profile Banjar/Dukuh Level		Estimated From Household Behavior Sample*		
	Mean	Sample Mean	Range by Banjar/ Dukuh	Ky/Sy	KMSy/Ky	KMSy/Sy
Bali	>.90	.97	(.75 to 1.00)	.60	.69	.41
Jawa Timur (10 kabu- patan)	>.90	.71	(.11 to 1.00)	.69	.53	.37

\*Sy = number of youngest balita in household behavior sample

Ky = number of youngest balita every weighed at a weighing post (coverage)

KMSy = number of youngest balita with current KMS card (participation)

In addition to SKDN data the current reporting and recording system gathers a large quantity of other data on program operations. Early in the project amendment effort should be made to prepare a synopsis of the current research and testing related to monitoring program operations to be used to develop more appropriate and practical monitoring and evaluation indicators.

### 3.2 Existing Provincial Research Capabilities

Indonesia is moving very rapidly in the development of programs and in monitoring and evaluation. In certain ways it is clearly a world leader. For example, Indonesia is the only country in the world which has developed a comprehensive scheme for regularly reporting local and regional information on the nutritional status of children.

There is considerable research capacity in the national government and in several university based research institutions. The Universities of Airlangga, Udayana and Brawijaya, have participated directly in the evaluation research activities under the VHS/MCW project, and we recommend they continue their involvement under the

amendment.

Another group, the Morbidity and Mortality Research Project of the School of Public Health at the University of Indonesia is embarking upon a study designed to determine key analytical variables which can help to monitor BKKBN activities. Their protocol and research design is contained in their proposal and so will not be repeated here. Because this effort could both continue the development of research capability and materially assist in the development of an improved M & E system we strongly encourage this group's participation in the research associated with the project amendment. Another link with this group will be the return of a faculty member of the University of Indonesia, School of Public Health who is completing his Ph.D. from the University of Michigan. This faculty member, Junadi Purnawan, is using the data from the evaluation research activities for his dissertation.

### **3.3 Computer Resources Available**

The computer resources available to BKKBN and the various Indonesian research institutions likely to be involved in the M & E activities covered under the project amendment are also in the process of substantial development. In addition to the central facilities of BKKBN there are plans for expansion of computational resources at the BKKBN provincial level. It is important to estimate what resources will be available for M & E activities and to build a linkage between the proposed amendment activities and these computational resources.

During the VHP/MCH project, four IBM-XT computers were provided to BKKBN. One resides at the central office in Jakarta and the other three are available to researchers at each of the universities participating in the evaluation.

Over the next several months USAID is planning on providing an additional ten microcomputers to BKKBN as the first phase of a program to equip all twenty-seven provinces with microcomputers. Happily, this first phase includes equipping East Java, Central Java and Bali, three of the four provinces scheduled to be actively involved in the project amendment. These computers (IBM PC/ATs) are completely compatible with the PC/XTs used in the evaluation research program.

The IBM/XTs used in the evaluation research were quite adequate for entry of the survey data to machine readable form. This was done using dBASEIII data entry programs that included error detection routines. Our experience in preliminary data analysis using dBASEIII and SPSS-PC software on the IBM-XTs with 10 megabyte hard disk is that the machines are not able to handle the data management required, for example, analysis of 2378 observations of 30 to 40 variables at one time in the East Java data set required inconveniently long processing time. Preliminary estimates of data

capacity needs for monthly reporting of *pos yandu* and KB clinic activity suggest more machine capacity will be needed for these tasks as well. We recommend that IBM-ATs with additional twin 20 megabyte Bernoulli hard disks or some comparable configuration be supplied to researchers and to provincial BKKBN offices that will be involved in the M & E amendment activities. With proper coordination, software developed and or utilized in both the amendment activities and the reporting and recording activities will be compatible. Figure 3-2 and 3-3 show the newly instituted monthly records from each of the approximately seven thousand *kacamatan*. It is recommended that these reports be considered as key inputs to any monitoring and evaluation system developed and tested during the amendment period. The precise relationship between these and other ongoing periodic reports within the current BKKBN system and the prototype M & E system will require careful analysis. For now it is perhaps sufficient to recognize their fundamental importance and to have this centrality as a design criterion for the M & E activities. Section 3.4 of this report discusses possible variations in timing, frequency and character of the feedback loops for the information contained in these reports.

### 3.4 Management Information Systems

The sections on mothers' participation, program effectiveness and community participation identified issues and variables that need to be considered in the design of a monitoring and evaluation system. The information system itself has several features which require some preliminary implementation. Some of these are discussed here.

#### 3.4.1 Information Channels

Currently BKKBN accumulated *desa* level data on PLKB activities and KB clinic activities at the *kacamatan* level. A summary form is prepared for *kabupaten* level with a copy sent to BKKBN pusat in Jakarta. The Jakarta office transfers the data into machine readable form and prepares summary documents for provincial level. Tabulated results are available usually in two to three months through this channel. This is a suitable time frame for some types of analysis and decision but more rapidly available tabulations might be useful for a wider range of management decisions.

Some experimentation with different channels of reporting may reveal opportunities for more rapid processing. The price of computers has dropped to a level where it is reasonable to expect machine processing at provincial or even *kabupaten* level. Several variations in data aggregation and transfer to machine readable forms should be tried to establish level of detail, aggregation, accuracy and frequency of reporting by cost and turn-around time. Entering disaggregated data, e.g., *desa* level information, into machine readable form permits more highly selective analysis but at the cost of higher data entry costs.



KABUPATEN/KODYA : .....  
 PROPINSI : .....

NO. KODE KABUPATEN :

BULAN : .....

I. FREKUENSI PELAYANAN : 1. HARI BUKA KLINIK KB : ..... Hari  
 2. PELAYANAN DI LUAR KLINIK KB : ..... Hari

II. HASIL PELAYANAN

No.	METODE KONTRASEPSI	PESERTA KB BARU (orang)					PESERTA GANTI CARA KE METODE (orang)		
		Oleh Klinik KB di dalam Klinik KB	Oleh Klinik KB di luar Klinik KB	Oleh Dokter Praktek Swasta	Oleh Bidan Praktek Swasta	Jumlah	Oleh Klinik KB di dalam/ di luar Klinik KB	Oleh Dokter Praktek Swasta	Oleh Bidan Praktek Swasta
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	IUD								
2	Pil								
3	Kondom								
4	Obat Vaginal								
5	Metode Operatif Pria								
6	Metode Operatif Wanita								
7	Suntikan								
8	Implant								
	J U M L A H								

IV. PERSEDIAAN KONTRASEPSI DI KLINIK KB DAN DESA

No.	ALAT KONTRASEPSI	DI KLINIK KB		Sisa akhir bulan di desa sebelum di bawa ke Klinik KB
		Dikeluarkan bulan ini	Sisa (Stock) akhir bulan ini	
(1)	(2)	(3)	(4)	(5)
1	IUD ukuran : B, no. 4 (biji)			
2	Ukuran : C, no. 3 (biji)			
3	ukuran : D, no. 2 (biji)			
4	Cooper T/Cooper 7 (biji)			
5	ML Cu (biji)			
6	Pil (strip)			
7	Kondom (kusin)			
8	Suntikan (flacon)			
9	Implant (unit)			

V. SARANA PELAYANAN KONTRASEPSI

No.	Sarana Pelayanan Kontrasepsi	Tercatat	Melapor
(1)	(2)	(3)	(4)
1	Klinik KB		
2	Dokter Praktek Swasta		
3	Bidan Praktek Swasta		
4	Aparik		
5	PKKB		

Keterangan : .....

Kepala BKKBN Kabupaten/Kodya.

III. PEMBERIAN KONTRASEPSI (BARU + ULANGAN)

		JUMLAH ALAT KONTRASEPSI YANG DIBERIKAN KEPADA PESERTA KB (BARU + ULANGAN)						
		Oleh Klinik KB di dalam Klinik KB	Oleh Klinik KB di luar Klinik KB	Oleh Dokter Praktek Swasta	Oleh Bidan Praktek Swasta	Oleh Aparik	Melalui Sarana desa	Jumlah
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Pil (strip)							
2	Kondom (kusin)							
3	Obat Vaginal (tube)							
4	Suntikan (flacon)							
5	Implant (unit)							

CATATAN : Rekapitulasi Laporan bulanan ini harus sudah dikirim ke BKKBN Propinsi selambat-lambatnya tanggal 15 bulan berikutnya.

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Recommendations on usefulness of data by level of aggregation and speed of turn-around would result from an information channel analysis.

#### **3.4.2 Integrated Feedback and Accumulation**

Our experience is that data being used by those who collect it retains a high level of accuracy. The reason is that incorrect information is quickly noted and easily corrected. On the other hand, data gathered and forward to higher centers but not used becomes increasingly inaccurate in subsequent reporting cycles. This is especially true if no feedback is provided. Such data are usually aggregated over time into quarterly, annual or end-of-project summaries. These data have the greatest potential for containing undetected and uncorrectable errors. Yet major program-wide or long-term decisions may be based on the aggregated data.

The strategy to use to avoid this situation is to integrate short-term feedback of machine processed data useful to field workers with data aggregated under machine control and intended as support for longer term decision making. In this fashion errors are detected and corrected early by field workers and accurate and durable records are forwarded to central decision makers. Finally the data can enter a data archive for long-term storage but where retrieval is quite straightforward and easy.

Using computers close to the field as data entry devices in which data are processed through a data entry program that looks for field width errors or range errors is an example of an integrated system. The feasibility of employing simple compared to more elaborate data management styles will be investigated.

#### **3.4.3 Computer Use in Data Management**

Recommendations will be developed for appropriate computer hardware and software for information processing at different levels of management. Certain software will be prepared specifically for delivery of timely information regarding program operations. This will be feasible to do in the form of quality control analysis—comparing outcome variables with an expected range generated from theory or past experiences—at quite disaggregated levels. For example, the computer program used at provincial or **kabupaten** levels might automatically flag only certain **desa** where reported values deviate beyond established limits.

#### **3.4.4 Training for Computer Aided Decision Making**

If computers are to be integrated into the management information system at provincial level and perhaps in some experimental programs, at **kabupaten** level, management personnel will need training in how to utilize the new information capacity. We refer to more than a staff familiar with operating a computer. Acquiring or training such personnel must be accomplished upon acquisition of the computer and budget to do

so should be included in the computer acquisition costs. This also includes computer maintenance costs.

Another style of training is needed for current managers in order that they learn what to expect from an increased information-management capacity. The consultant team should help program managers specify information needed for daily operations and then prepare protocols that take advantage of the computer aided information system. The results will be delivered in workshops to be held at the time of each computer installation and periodically thereafter.

#### **3.4.5 Type of Surveillance**

There are several types of information associated with the program. These include outcome variables, program characteristics, knowledge, attitude and practice, community profile, environmental conditions, and program operations. Outside data sources may be relied upon for some of this information. Preferably exchange with other agencies will be in machine readable form. Susemas data from PBS (Central Bureau of Statistics) can be obtained in this form as can data on vital statistics down to *kabupaten* level. Data from the TWIS (Timely Warning Information System) program will be available for a small number of *kabupaten* that have critical food shortage potential.

#### 4: THE SEQUENCE OF PROGRAM ACTIVITIES AND FOLLOW-UP TECHNICAL ASSISTANCE

Figure 1 shown on page 3 of this report suggests a general sequence of activities to be carried out during the three year project amendment. It is recommended that the amendment project commence with the identification of program and M & E variations to be tested from four sources of evidence:

- 1) promising program variations from the results of the evaluation research,
- 2) most effective M & E variables based on empirical selection from the evaluation report,
- 3) most useful recurrently gathered M & E variables from the existing monthly reporting and recording system used by BKKBN and DEPKAS, and
- 4) most effective M & E variables (and processes) from other ongoing research activities such as the Cornell and the SPH/UI studies.

Prototypes of both program variations and the M & E system derived from these sources should be structured and agreed upon prior to the end of the first six months of the amendment. Work on this task can begin at the seminars to be held during the last week of September 1986.

Subsequently several program variations will be undertaken in selected sites in Jawa Timur, Bali and Lombok. The scope and duration of each program variation would be developed in a separate sub-proposal describing in detail the modifications to be introduced. Following the program variation an assessment of the value of the modifications relative to current practices would be made. The Central Java program would consist of variations in methods of introducing a program to a new region. These variations would also be described in detail and analysed.

Similar efforts would be undertaken in testing prototype management and evaluation systems using different types of information and information channels including small resurvey activities as well as processing built-in information flows.

All of these activities may be subject to modifications during the amendment period as the consequence of feedback from the field experiences. The modifications initiated as a result of field experiences will be shared during workshops to be held at least once each year of the amendment. Project and program personnel and cooperating researchers from local institutions would attend these sessions.

The final report of the project would contain recommendations for program changes and M & E systems operations that would reflect a coordinated assessment of the modifications tested.

APPENDIX A

PARTICIPANTS OF MEETINGS ATTENDED  
BY COMMUNITY SYSTEMS FOUNDATION PERSONNEL

MEETING WITH DR. HARYONO SUYONE, BKKBN  
Monday, January 20, 1986

1. Mr. Jeff Marks	Academy of Nutrition
2. Dr. Peter Fajans	BKKBN
3. DR. Sonya Rahardjo	BKKBN
4. Ms. Alma Kern	BKKBN
5. Dra. Endang Parwiningrum	BKKBN
6. Drs. Harry Victor Darmokusume	BKKBN
7. DR. Sukirman	BAPPENAS
8. Mr. Charles Johnson	USAID/Washington
9. Dr. E. Vougaropoulos, M.D. MPH	USAID/Jakarta
10. Ig. Tarwotjo, MSc.	Ministry of Health
11. Prof. Darwin Karyadi	Ministry of Health
12. Drs. Soetedjo Moeljodihardjo	BKKBN
13. Dr. Srihartati P. Pani, MPH	BKKBN Pusat
14. Drs. Soegeng Waloejo, MPH	BKKBN
15. Ms. Julie M. Klement	USAID/Jakarta
16. Dr. Jere Haas	Cornell University
17. Dr. Samhary	UNICEF/Jakarta
18. Damreng Silpachai	UNICEF/Jakarta
19. William Drake	Community Systems Foundation
20. John Nystuen	Community Systems Foundation

**DAFTAR PESERTA SEMINAR PENYAJIAN HASIL  
SEMENTARA "DETERMINANT STUDY"  
PENELITIAN KB-GIZI DI BATU MALANG  
JANUARY, 22-25, BATU, JAWA TIMUR**

**I. BKKBN PUSAT**

1. Dr. Ny E. Srihartati P. Pandi MPH
2. Drs. Soegeng Waloejo, MPH
3. DR. Nana Sudjana
4. Drs. Bambang Soeroto
5. Drs. A. Muchji
6. D Entarsih
7. Dra. Nurhayati Djamzuri
8. Drs. Mazwar Nurdin
9. Ir. Mudjianto
10. Sri Djuarini
11. Asaad Malik
11. Asaad Malik

**II. BKKBN PROPINSI JAWA  
TIMUR**

1. Dr. R. Soedarto
2. Dr. Halim Wibisono, MPH
3. Drs. Tamadi
4. Ny Suhartati, BSc
5. Drs. Bambang Soegeng, MSc

**III. BKKBN PROPINSI BALI**

1. Dr. I.B. Astawa, MPH
2. Drs. I.A.M. Wirati

**IV. DEPARTEMEN KESEHATAN**

1. Ign. Tarwotjo, MSc
2. Dra. Asmirah

**V. INSTITUTE PERTANIAN  
BOGOR**

1. Ir. Suhardjo, M. Phil

**VI. FAKULTAS KEDOKTERAN  
U.I. SEAMEO**

1. Dr. Soemilah Sastroamidjojo

**VII. DONOR AGENCY/  
KONSULTAN**

**VIII. UNIVERSITAS AIRLANGGA**

1. Prof. Soeharto Setokoesoemo
2. Prof. Hermien Hadiati Koeswadji, S
3. Soetandjo Wignyosoebroto, MA
4. Drs. Moedjito Slamet
5. Dr. Sunaryo
6. Dr. R. Soedibyo, HP DTM

**IX. UNIVERSITA BRAWIJAYA**

1. Drs. M. Saleh
2. Dr. Tatong Haryanto, MSc
3. Drs. Affandi

**X. YAYASAN INDONESIA  
SEJAHTERA**

1. Ms. Mary Johnston

**XI. UNIVERSITAS UDAYANA**

1. Dr. D.M. Wirawan, MPH
2. Dr. I. Wayan Kandra, MPH
3. Dr. I Komang Gunung, MPH
4. Drs. I. Komang Rastini
5. Drs. A.A. Anom Kumbara
6. Drs. Emiliana Mariyah
7. Dr. I.B. Dharmika

**XII. PELAKSANA PERTEMUAN/  
SEMINAR**

1. Dra Kasmiyati
2. Ny. Made Sundiarsih Wachyudi
3. Abdul Rasyid

**XIII. DEPT. OF AGRICULTURE**

1. Dra. Wetnowati

**XIV. BALI HEALTH**

1. Ms. Julie M. Klement
2. Dr. Peter Fajans
3. Mr. Charles Schleigle, UNICEF

4. Sryanto, MPH, UNICEF
5. Ms. Alma Kern
6. Dr. Sonya Rahardjo
7. William Drake, CSF
8. John Nystuen, CSF

1. Dr. Sutrisno Widjaya

OTHER

1. Drs. Nazri Gayur
2. Drs. Samekto Handoyo
3. Drs. Sihhadi Purnomo (UNAIR)
4. Drs. Samsul Ma'arif
5. I.B. Permana, MSc
6. Drs. Harijava

**MEETING TO DISCUSS PRELIMINARY ANALYSIS OF  
HOUSEHOLD BEHAVIOR AND COMMUNITY PROFILE SURVEYS**  
27 January 1986, Bali - Kuta Beach Hotel

Dr. I. B. Astawa, BKKBN, Bali  
Dr. Ny E. Srihartati P. Pandi, MPH, BKKBN, Jakarta  
Drs. Soegeng Waloeso, MPH, BKKBN Jakarta  
Dr. Nana Sudjana, BKKBN, Jakarta  
Dr. Sonya Rhardjo, BKKBN, Jakarta  
Dra. Sun Umi Lastari, UNBRAU  
Dr. Peter Fajan, MPH, BKKBN Pusat  
Ms. Julie M. Klement, USAID  
Dr. Halim Wibisono, MPH, BKKBN, Jawa Timur  
Mr. Charles Schleigle, UNICEF  
Dra Daniel Sparringa, UNAIR  
Dra Sihhadi Poernomo, UNAIR  
Drs. Haridjaja, Jawa Timur  
Ig. Tarwotjo, MSc, Kesematan  
Dr. Djoko Susanto, Bogor  
Drs. Sriharijati Hatmadji, MSc., LD-FE-UI  
Dra. Ny Nurhayati, BKKBN, Bali  
Drs. M. Affandi, UNBRAU  
Dra. Sudaman, UNBRAU  
Prof. Ross Steele, UNBRAU  
Dra I.A.M. Wirati, BKKBN, Bali  
Drs Koman Rastini, UNUD  
Asaad Malik, BKKBN Pusat  
Dr. Tatong Haryanto MSc., UNBRAU  
Drs. M. Saleh, UNBRAU  
Dr. D. U. Wirawan, MPH, UNUD  
Dr. I. Wayan Kandra, MPH UNUD  
Dr. I. Komang Gunnung, UNUD  
Dr. Gary Lewis, BKKBN  
Dr. Robert Timmons, CSF  
Dr. William Drake, CSF  
Dr. John Nystuen, CSF  
Drs. Harry V. Darmokusumo, MPH  
Drs. Sudama H.W.  
Ny. Wartini, SH  
Ir Mudjianto  
Dra. Sofinas  
Dra. Sri Djuarini  
Dr. Sutarjo  
I.D. Permana, MSc

**MEETING FEBRUARY 4, 1986 - JAKARTA WITH DR. VOULGAROPOULOS**

Dr. E. Voulgaropoulos, MD, MPH  
Dr. Sonya Rahardjo, BKKBN  
Ms. Alma Kern, BKKBN  
Ms. Julie M. Klement, USAID  
Dr. William Cole, USAID  
Dr. William Drake, CSF  
Dr. John Nystuen, CSF

**MEETING FEBRUARY 6, 1986 - JAKARTA - BAPPENAS**

Dr. Sukirman, BAPPENAS  
Ign. Tarwotjo, MSc, KESEHATAN  
Jeff Marks, Cornell University  
Hardono, BAPPENAS  
Ms. Julie M. Klement, USAID  
Dr. William D. Drake, CSF