PROJECT EVALUATION SUMMARY 4970188 (6)

PD-AAD-747-B1

1. Mission or AID/W Office Name USAID/Jakarta, Indonesia	2. Project Number 497-188.0

3. Project Title
Family Planning Assistance -- Services

26p.

4. Key project dates (fiscal years) a. Project Agreement Signed FY 1977 b. Final Obli-gation FY 1977 c. Final input delivered FY 1980 [1]		5. Total U.S. funding - life of project [2] $ 1,431,000 [3] $ 3,082,371
6. Evaluation number as listed in Eval. Schedule 78-2	7. Period covered by this Eval. From: 11/76 Month/year To: 11/77 Month/year	8. Date of this Evaluation Review 11/8/77 Month/Day/Year

9. Action Decisions Reached at Eval. Review, including items needing further study (Note--This list does not constitute an action request to AID/W. Use telegrams, airgrams, SPARS, etc., for action)	10. Officer or Unit responsible for follow-up	10. Date action to be completed
PP 497-0271 to be prepared and submitted for AID/W approval.	USAID/PH W. H. Johnson	1/15/78

Clear:
OPH:THReese
CWTerry
[redacted]
Mission Evaluation Officer:RZimmerman

12. Signatures:

Project Officer	Mission or AID/W Office Director
Signature	Signature
Type Name William Howard Johnson	Typed Name Thomas C. Niblock
Date 11/8/77	Date 11/30/77

[1] Per PROP approved DA/AID 6/10/75.
[2] Planned in PROP for FY 75-77. Additional $14,267,000 for FY 68-74
[3] Actual obligations FY 75-77.

13. **SUMMARY** - Summarize in about 200 words the current project situation, mentioning progress in relation to design, prospects of achieving purpose, major problems encountered, etc.

The Family Planning Assistance - Services Project (PROP Rev. 3, 497-15-580-188.0) was approved June 10, 1975 (State 140917) and successfully completed September 30, 1977. A copy of the project logical framework is attached as Annex I.

With one very minor exception (i.e., the number of service centers offering sterilization) virtually all input, output, purpose and goal targets were achieved or surpassed as described below:

INPUTS	PLANNED	ACHIEVED
- Grant funds	$1,431,00	$3,082,371
- Centrally funded OCs	68.7 million	96.3 million
OUTPUTS		
- Contraceptive outlets	33,515	52,743
PURPOSE		
- Java/Bali: contraceptive prevalence as % married women of reproductive ages 15-44 (MWRA)	24-28%	26%
GOAL		
- Fertility reduction	50% reduction in 1973 crude birth rate (CBR) of 40-46/1000 by year 2000	1976 CBR of 38 for Indonesia and 34 for Java/Bali

Actual monetary inputs exceeded planned monetary inputs due to a FY 1977 project authorization increase approved by the Deputy Administrator. The number of contraceptive outlets opened exceeded the number planned due to the rapid acceleration of village family planning. The increase in contraceptive prevalence of use and the reduction of fertility achieved are in line with accomplishments planned as will be described in detail in items 17 and 18.

As all project objectives have been met, the next step will be new Project Proposals to allow for uninterrupted progress toward the ultimate goal of a 50% reduction in fertility. If the rate of progress toward goal achievement which was established FY 1975-77 can be maintained, the goal should be achieved about ten years prior to the target date of the year 2000.

The design of the project (PROP), which was only 12 pages long including facesheet and annexes, was found to be amazingly accurate in forecasting accomplishment, sufficiently descriptive yet flexible and refreshingly concise.

No major implementation problems were encountered. The most significant difficulty has been responding to the AID/W directive to begin the transition from U.S. to GOI funding of OC inputs. This transition process began in FY 1977 with a switch from grant to loan funding which has created unanticipated consequences (e.g., GOI decision to locally produce OCs and push IUDs); however, we have been able to cope with these consequences to date.

14. EVALUATION METHODOLOGY - Describe the methods used for this evaluation i.e., was it a regular or special evaluation? Was it in accordance with the Evaluation Plan in the PP with respect to timing, study design, scope, methodology and issues? What kinds of data were used and how were they collected and analyzed? Identify agencies and key individuals participating and contributing.

This is the third, regular annual evaluation (see PAR 76-1 dated 9/3/75 and PAR 77-1 dated 11/8/76) of the project. The PROP authorizing the project contained no evaluation plan per se. However, evaluation has been conducted in accordance with the "means of verification" section of the logical framework. Input data were collected for evaluation from project agreements, implementation orders and letters of agreement. Output data were collected from official monthly, quarterly and annual BKKBN (National Family Planning Coordinating Board) reports. Purpose data were collected from monthly service statistics and logistics reports of BKKBN as well as surveys of contraceptive prevalence andcontinuation rates. Goal data were collected and analyzed by the Central Bureau of Statistics and Demographic Institute, University of Indonesia. The core data source has been the BKKBN service statistics system which provides monthly estimates of new acceptors and current users. Two independent surveys (the 1973 Fertility-Mortality Survey and the 1976 Intercensal Population Survey) have shown that the BKKBN service statistics estimates of current users are actually conservative in that they slightly understate the total number of contraceptive users (see Sinquefield and Jones, "Evaluating the Validity of the Indonesian Family Planning Service Statistics," July 1976 and Sinquefield and Sungkono "Fertility and Family Planning in Java and Bali 1967-76," September 1977). Key agencies and individuals have been the USAID Direct Hire Population Staff and the following BKKBN officials: Chairman, Deputy Chairman III, Chief of Logistics.

15. Documents to be revised to reflect decisions noted Page 1.

- ☐ Project Paper (PP)
- ☐ Financial Plan
- ☐ PIO/T
- ☐ Project Agreement
- ☐ Logical Framework
- ☐ CPI Network
- ☐ PIO/P
- ☒ Other (Project Paper-PP-497-0271 to be prepared
- ☐ This evaluation brought out ideas for a new project-a Project Identification Document (PID) will follow.

16. Evaluation findings about External Factors - Identify and discuss major changes in project setting which have an impact on the project. Examine continuing validity of assumptions.

There are no major changes in project setting which have had an impact on the project. The critical assumptions outlined in the original PROP continue to be valid.

17. Evaluation findings about Goal/Subgoal - for the reader's convenience, quote the approved sector or other goal (and subgoal, where relevant) to which the project contributes. Then describe status by citing evidence available to date from specified indicators and by mentioning progress of the other projects (whether or not U.S.) which contribute to same goal. Discuss causes - can progress toward goal be attributed to project, why shortfalls?

"The project goal is to include fertility reduction measures as an integral part of development policies and programs leading to a 50% reduction in the crude birth rate (CBR) by the year 2000. (The CBR in 1973 was 40-46/1000)." (As extracted from page 2 PROP 497-15-580-188.0.)

The results of the World Fertility Survey (Phase III of the 1976 Intercensal Population Survey) are now becoming available. The survey results indicate that considerable progress toward the goal of fertility reduction has been achieved on Java/Bali, especially in the provinces of East Java and Bali. Further, the survey discovered that most of the fertility decline is due to changes in marital fertility rates (i.e., rather than change in proportion of females age 15-44 married) as a result of use of modern methods of family planning. Quantitatively, on Java/Bali the Total Fertility Rate (TFR or total number of live births a woman would have if she lived through her entire reproductive period and experienced currently existing age - specific fertility rates) declined 15% (i.e., from 5.29 to 4.51) from 1967-71 to 1976; and the Crude Birth Rate (CBR or total annual births per 1000 persons in population) declined 11% (i.e., from 38 to 34) for the same period. Since Outer Islands I (10 of 21 outer island provinces) only entered the program in April 1974, it is too early to expect any fertility decline. Those persons wishing a more

detailed analysis of goal (i.e., fertility reduction) progress should see Annex II which is a summary of the World Fertility Survey results for Indonesia.

18. Evaluation findings about Purpose: (a) Quote the approved project purpose. Cite progress toward each End-of-Project Status (EOPS) condition. When can achievement be expected? Discuss causes of progress or shortfalls.

The purpose of the project (originally limited to Java/Bali) was to "increase the prevalence of use of all legal types of contraceptive methods." The targeted end-of-project status (EOPS) was "24-28% of married women age 15-44 practicing contraception by July 1, 1977." (Note: it was assumed that 6/30/77 would be the end of FY 1977.) The purpose of the project has been achieved with an estimated 26.1% of Java/Bali's married women of reproductive age (15-44) or MWRA currently using family planning as of 8/31/77 according to the BKKBN service statistics estimates. BKKBN annual estimates of contraceptive prevalence (current users) from beginning to end of project follows. Note that contraceptive prevalence doubled during the life of the project.

	Java/Bali Current Users As % MWRA			
	End FY 74 (6/30/74)	End FY 75 (6/30/75)	End FY 76 (6/30/76)	Near End FY 77 (8/31/77) *
Pill	7.3%	10.1%	13.2%	15.2%
Condom	0.7%	1.4%	0.9%	1.2%
IUD	5.1%	6.5%	6.9%	9.2%
Injection	--	--	0.1%	0.2%
Others	--	--	0.2%	0.3%
Total	13.1%	18.0%	21.3%	26.1%

Since the purpose achievement was forecast with unusual accuracy, some may question the validity of BKKBN current user estimates. As pointed out in PES question 14, the BKKBN estimates are believed to be somewhat conservative. Independently derived (by Central Bureau of Statistics) 1976 estimates of contraceptive prevalence on Java/Bali are: Bali (38%), East Java (29%), Central Java (26%), Jakarta and Yogyakarta (19%), West Java (15%) and Java/Bali (28%).

(b) What is current priority of Project with the GOI? Do USAID and GOI share common perception of Project Purpose? How is this priority and common perception manifest in project implementation?

*Report for 9/77 not yet available

The project is of the highest priority with the GOI. The President continues to review family planning progress quarterly and discuss these results with the governors. In September 1977 a special family planning exhibition was held at the President's office (Bina Graha) where President Suharto reiterated his support and urged that efforts to institutionalize family planning be accelerated. GOI support can be evaluated in a number of ways. In terms of moral backing and wide cooperation from other governmental agencies, the GOI record is good. Family planning is probably the most integrated GOI development effort with involvement of the Ministries of Education, Health, Interior, Information, Religion, Armed Forces and numerous private groups. In terms of GOI budgetary support, development budget inputs have shown continued growth:

GOI FY	($000)	GOI FY	($000)
1968/69	75	1973/74	5,885
1969/70	300	1974/75	8,400
1970/71	1,323	1975/76	12,500
1971/72	2,300	1976/77	15,600
1972/73	5,134	1977/78	22,207

Total GOI budgetary support for FY 1977/78 is $33,131,000 comprised of $10,904,000 from the routine budget and $22,207,000 from the development budget. The family planning appropriations represent 0.4% of the total GOI budget for GOI FY 1977/78. While this may sound low, the U.S.G. from fiscal 1969 through fiscal 1975 (latest data available) appropriated a cumulative total of only $584 million for domestic family planning (Cutright and Jaffe, Impact of Family Planning Programs on Fertility, 1977, p. 111). This total of 7 years inputs represents only 0.2% of the total U.S. budget for FY 75. In other words, the GOI proportionally invested twice as much (as % total budget) in domestic family planning in one year (GOI FY 77/78) as the USG invested in domestic family planning in 7 years (U.S.FY 69-75). While it is true that the need for subsidized family planning services is lower in the US than in Indonesia, it is also true that US per capita GNP is more than 50 times greater than Indonesia's per capita GNP. Thus, given multitudinous needs and scarce resources, we feel the record of GOI support is good. Total program inputs 1968-77 have been about $133.5 million with 39% from GOI, 31% from AID and 30% from other donors combined (predominately IBRD and UNFPA). Total program inputs FY 1978-82 should be about $327 million with at least 66% from GOI, 20% ($65 million) from AID and 14% from IBRD, UNFPA and other donors.

19. Evaluation findings about Outputs and Inputs - note any particular success or difficulties. Comment on significant management experiences of host contractor and donor organizations. Describe any necessary changes in schedule or in type and quantity or resources or outputs needed to achieve project purpose.

As related in PES item 13, the total outputs and inputs achieved exceeded those planned. Individual output and input indicators achieved exceeded those planned with two exceptions. First, under outputs the number of voluntary sterilization centers fell considerably short of the number planned. This was due to several factors beyond USAID/BKKBN control: political sensitivity of sterilization, especially in the election year of 1977; slower than anticipated progress of the Indonesian Association for Voluntary Sterilization; lack of a clear GOI policy on allowable activities of intermediaries; closing by Pathfinder of its office in Indonesia; lack of viable equipment importation procedures for private donors; GOI decision to limit bilateral sterilization inputs during the life of this project. Second, under inputs no funds were obligated for personnel because requirements were handled by USAID direct hire staff, TDY from AID/W, AID/W contractors or other donors.

(a) OUTPUTS - Contraceptive accessibility as measured by number of outlets

	EOPS Planned	EOPS Achieved
clinics	3,215	3,668
village outlets	30,000	49,000
voluntary sterilization centers	300	75
total	33,515	52,743

(b) INPUTS

	EOPS Planned	EOPS Achieved	FY 77	FY 76	FY 75
Personnel	$ 75,000	$ -0-	$ -0-	$ -0-	$ -0-
Commodities	710,000	960,000	260,900	122,550	576,850
Training	196,000	272,691	150,891	32,930	88,870
Local Cost	450,000	1,849,380	1,288,209	280,925	280,246
Total	$ 1,431,000	$ 3,082,371	$ 1,700,000	$ 436,405	$ 945,966
AID/W grant funded cycles OC	68,700,000	96,320,000	15,000,000	47,080,000	34,240,000

Inputs since the last evaluation (see PAR 77-1 dated November 8, 1976) are presented below in detail:

i) Personnel - None
ii) Commodities - 2,750 medical kits; 100,000 Copper T IUDs; and 5 audio visual sets
iii) Training - 141 person - months
iv) Local Costs - as listed

- $ 54,246	Aceh Village FP
- 65,815	FP Village Newsletter (Warga Sejahtera)
- 115,513	In-Country Population Training
- 40,031	Lampung Village FP
- 96,701	Yogjakarta Village FP
- 67,704	North Sulawesi Village FP
- 28,406	West Kalimantan Village FP
- 89,409	West Sumatra Village FP
- 126,731	North Sumatra Village FP
- 69,655	South Kalimantan Village FP
- 65,000	Population Research Training
- 40,459	NTB Village FP
- 40,680	Vital Registration & Fertility & Mortality Data Analysis
- 43,500	Lippes Loop IUD's (600,000)
- 26,791	Family Planning Exhibit
- 83,576	South Sumatra Village FP
- 18,384	Contraceptive Newsletter
- 38,953	FP Radio Drama
- 12,802	All Sumatra Village FP Review
- 24,966	Additional Reporting/Recording Forms
- 84,552	South Sulawesi Village FP
- 19,812	Demographic Analysis Training
-- 34,523	Balance Unsubobligated
$1,288,209	Total

20. Evaluation findings about Unplanned Effects - has project had any unexpected results or impact, such as changes in social structure, environment, health, technical or economic situation? Are these effects advantageous or not? Do they require any change in plans?

(a) Social structure - the social/political effects of the project are speculative. The project may have encouraged a decentralization in decision making and may have strengthened the role of fertile females in family decisions, but these would be difficult to measure. A multi-dimensional village development dynamic has appeared in Java with the introduction village family planning.

(b) Ecological - the project should have initiated an indirect positive effect in moderating environmental problems; however, this effect was not measured or evaluated during the course of the project.

(c) Health - the project should have lowered maternal morbidity and mortality and may have improved infant mortality; but these effects cannot be demonstrated.

(d) Economic - by slowing population growth, the project should lessen the influence of one factor (rapid population growth) compromising the quality of human life by restraining socio-economic development and hampering progress in the areas of employment, education, housing, food and health.

All the above effects or potential effects are viewed as positive and require no change in plans.

21. Does this project have any impact on the five development criteria outlined in Section 102 (d) of the FAA (i.e., a. increasing agricultural productivity through small farm labor intensive agriculture; b. reduce infant mortality; c. control population growth; d. promote greater equality in income distribution; and e. reduce rates of employment and underemployment). Explain.

Yes, the project should help control population growth by reducing fertility. Reductions in fertility should facilitate reductions in infant mortality, underemployment, unemployment, and promote equality fn income distribution.

22. Who are the direct and indirect beneficiaries of this project? (Identify, describe nature of benefits and number of those benefiting). Finally, do the benefits justify the costs?

The direct beneficiaries are the more than 9 million women who have accepted and the 4 million women estimated to be currently using family planning. Indirect beneficiaries could be defined as the 45 million or more family members ever assisted and the 20 million or more family members currently being assisted. It is clear that the societal benefits of one birth averted vastly exceed the costs:

1968-77 (Total Program Costs)

Cost per family member assisted	= $ 3.00
Cost per acceptor	= 13.08
Cost per CYP	= 11.25
Cost per birth averted	= 41.47

23. Changes in Design or Execution - explain the rationale for any proposed modification in project design or execution which now appear advisable as a result of the preceding findings (items 16 to 20 above) and which were reflected in one or more of the action decisions listed on page 1 or noted in Item 15 on page 2.

None.

24. Lessons Learned - what advice can you give a colleague about development strategy - e.g., how to tackle a similar development problem or to manage a similar project in another country? What can be suggested for follow-on in this country? Similarly, do you have any suggestions about evaluation methodology?

(a) Try to define your comparative advantage as a donor (versus capabilities of host country and other donors) and capitalize on it. Comparative advantage in this project was twofold: local cost rapid response capacity/flexibility and central OC procurement. Try to avoid things you cannot do well.

(b) Merge your comparative advantage(s) with host country needs to establish investment alternatives.

(c) Set priorities and factor human and financial resources by using potential (expected) return on investment as the primary criterion.

(d) AID program planning and approval often encourages minimizing risk and uncertainty and this selects for low gain investments. We should try for a more balanced portfolio with considerably more moderate risk/high gain investments (i.e., we should be willing to live with more equivocality in project plans).

(e) Projects should not be "overdesigned" with undue emphasis on means (vs ends) in the PP. Methodological specificity

in social sector projects limits the project manager's options. Choices among alternative means can better be made in the context of elapsed experience.

25. (a) Special comments or remarks (for AID/W projects, assess likelihood that results of project will be utilized in LDCs).

Social projects rarely fail for lack of solutions but often fail because of insufficient attention to organizational adaptation or adoption of solutions. Organizational behavior cannot be mapped in advance. Social sector project objectives are more often achieved by successful navigation of an uncharted maze rather than by accurate, timely compliance with a charted course. We seem to plan social projects as if they were automobile rallies rather than the ballon races which they more often are. In an auto rally, a road map is essential. In a ballon race one needs flexibility to take advantage of prevailing winds and navigational aids to measure the direction of change. Although road maps can be appropriate for engineering projects, for social sector projects road maps are exercises in presumptive abstraction that carry opportunity costs, have little inherent value and are often dangerously misinterpreted. This brings us to two recommendations:

(A) Simplify Project Papers - for most social sector projects, a good logical framework and financial plan should be sufficient with other PP elements being optional;

(B) AID social sector projects should have small amounts of risk capital available to project managers to be used to facilitate process by quickly integrating the best available content into experimental efforts that will result in meaningful program evolution.

(b) Overall assessment of project performance

Unsatisfactory		Satisfactory			Outstanding	
1	2	3	4	5	6	7
						X

Narrative statement explaining ranking:

This project is given the highest performance ranking because: (1) no significant implementation problems were encountered; (2) progress toward input, output, purpose and goal was measured and achieved or exceeded objectives; (3) the value of flexible decentralized management was demonstrated.

Draft:WHJohnson:ci:bjm:10/26/77:11/28/77

Clearances:PRO:RFZimmerman (in draft)
OPH:THReese (in draft)
CWTerry (in draft)

AID 1020-28 (1-73)

PROJECT DESIGN

LOGICAL

Project Title & Number: Family Planning Assistance - Services 497-15-580-188.0

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR
Program or Sector Goal: The broader objective to which this project contributes: Decrease natural rate of increase of population by reducing fertility (i.e. 50% reduction of the 1973 CBR estimated at 40-46/1000 by year 2000).	Measures of Goal Achievement: Short Run: 1. Evaluation of demographic impact of national family planning program. 2. Measuring and monitoring mortality and fertility measures. 3. Reviewing indices of contraceptive coverage and use prevalence. Long Run: 1. Impact of fertility and mortality trends on population growth. 2. Adoption of small family norm. 3. Fertility impact of "intermediate" family formation and socio-economic variables. 4. Compatibility of fertility goals with socio-economic development goals.
Project Purpose: Increase the prevalence of use of all legal types of contraceptive methods	Conditions that will indicate purpose has been achieved. End of project status. 24-28% of married women age 15-44 practicing contraception by July 1, 1977.
Outputs: Contraceptive accessibility created through the development and continuation of contraceptive products and services distribution schemes.	Magnitude of Outputs: By July 1, 1977 IUDs, OC's and condoms offered through 3215 clinics, 300 centers with part or full-time sterilization services, extra-clinical distribution of OC's in nearly all villages (desa) on Java, extra-clinical and commercial distribution of condoms at the village level throughout Java and Bali (approx. 30,000 sites).
Inputs: Personnel costs, training, medical equipment, local costs and contraceptives (OC's only) from AID/W under Project 632-11-580-982.	Implementation Target (Type and Quantity) A. Personnel (TDY) $ 50 B. Medical Equipment 130 C. Training 111 D. Local Costs 300 $591 E. 68.7 million cycles of OCs funded by AID/W under Project 632-11-580-982.

SUMMARY

FRAMEWORK

Life of Project:
From FY 1976 to FY 1977
Total US Funding: $591,000*
Date Prepared: 3/4/75
*Excludes OC's financed by AID/W under Project 532-11-580-982

MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Surveys, mini-census, extensive analyses of existing data, review of research projects coordinated by BKKBN and conducted by units such as Demographic Institute, Central Bureau of Statistics, Social and Economic Research Institute, Faculty of Public Health, Dept. of Health and others.	Assumptions for achieving goal targets: Continued high GOI commitment to rapid fertility reduction as evidenced by population policy and budgetary support to fertility reduction efforts.
- Analyses of new acceptor, clinic revisit and contraceptive use data derived from the BKKBN service statistics systems. - Surveys of contraceptive prevalence and continuation rates.	Assumptions for achieving purpose: - Demand for contraceptives among at least 24-28% of fertile couples existing or will be created by 7/1/77. - Continued assistance of GOI, IDA/UNFPA, Population Council, and USAID (via other projects) to demand creation analyses and activities.
- Review of computerized clinic registration forms. - Official quarterly and annual reports of BKKBN. - Retail outlet surveys. - Reports of commercial distributors. - Field inspections.	Assumptions for achieving outputs: - Continuing GOI willingness to experiment with contraceptive delivery innovations. - Continued GOI policy favoring freer contraceptive availability. - Continued availability of at least one year's supply of contraceptives in-country at all times. - Continuing cooperation of commercial and extra-clinical distributors.
- Review of PROP's, Project Agreements, PIOs, PARs, to verify USAID inputs and review of plans, budgets, and program reports to to verify inputs of GOI and other donors.	Assumptions for providing inputs: - IUD's continue to be supplied by Population Council or BKKBN. - BKKBN or other donor will supply required condoms. - Continued availability of funds, commodities and staff necessary to realize and evaluate these inputs. - Continued USG support for population growth control efforts in Indonesia.

Annex II

PROGRAM PERENCANAAN NASIONAL
079/PPN/Sept./'77

RAHASIA
NOT TO BE QUOTED

FERTILITY AND FAMILY PLANNING IN JAVA AND BALI, 1967-76

By

Jeanne Cairns Sinquefield
and
Bambang Sungkono

There has been considerable interest in Indonesia concerning the impact that the National Family Planning Program has had on fertility in Java and Bali since its inception in 1970-71. To assess such impact the Central Bureau of Statistics in collaboration with the World Fertility conducted in 1976 a fertility/family planning survey covering Java and Bali. In this paper I will present some of the major findings from this survey, which will be forthcoming in a monograph. (See Sinquefield and Sungkono, 1977, BPS).

A. Estimates of Fertility in Java and Bali

Estimates of fertility by province in Java and Bali in the late 1960's are now available from three sources : 1971 Census (Cho et. al, 1976, BPS), 1973 Fertility Mortality Survey (McDonald et.al, 1976) and 1976 Java Bali Fertility Survey (Sinquefield and Sungkono, 1977). Their results are presented in Table 1 (Total Fertility Rates) and Table 2 (Crude Birth Rates). The Total Fertility Rate was estimated to be between 5.9-6.1 for West Java, 5.3 for Central Java, 4.4-4.6 for East Java, 5.8 for Bali, 4.4-4.6 for Yogyakarta, and 5.1-5.9 for Jakarta, with 5.2-5.3 for Java and Bali as a whole. The Crude Birth Rate, using the more reliable survey data, was estimated to be 38 in the late 1960's for Java and Bali, ranging from 43-44 in West Java followed by Jakarta 43, Bali 39, Central Java 36-37, East Java 33-35, and Yogyakarta 32.

The 1976 Java-Bali Fertility Survey provides the first reliable estimates of fertility for Java and Bali in the early 1970's (see Table 1 and 2). More recently available, but unpublished are the "own children" estimates of fertility based on the Part I of the 1976 Intercensal Census. Since both estimates were very compatible,

we will only discuss the former estimates. We estimate for 1972-3 a Total Fertility Rate of 5.0 for Java and Bali, with 5.8 for West Java, 5.0 for Central Java, 4.1 for Yogyakarta, 4.4 for East Java and 5.2 for Bali. The 1976 estimates were 4.5-4.6 for Java and Bali, with 5.3-5.5 for West Java, 4.4 for Central Java, 3.9-4.0 for East Java, and 3.8 for Bali. The Crude Birth Rate for Java and Bali in 1972-3 was estimated as 36, and as 34 in 1976.

Based on these results, we find that the Total Fertility Rate has declined by 15 percent from 1967-71 to 1976 (i.e. from 5.29-4.51), while the Crude Birth Rate has declined by 11 percent for the same period (i.e from 38 to 34). This decline is due to both changes in marital fertility rates, and increasing age at first marriage. To analyze the impact of changes in marriage patterns and marital fertility on fertility, we generated estimates of TFR and CBR while holding constant and not holding constant marriage patterns. If only marital fertility had changed from 1967-71 to 1976, (no changes in the percent currently married by age) TFR would only have declined by 10 percent (i.e. from 5.29 to 4.75) instead of by 15 percent. The CBR would only have declined by 6 percent (i.e. from 38 to 36) instead of 11 percent. Thus changes in marital fertility account for 70 percent of the change in TFR's and 46 percent of the decline in CBR's. The young age structure of Indonesian's population causes marriage patterns to be a more important factor in affecting CBR's that TFR's.

The above results are encouraging since both marriage patterns and marital fertility is changing to reduce fertility in Java and Bali. This suggests that basic cultural and social adaptations to population pressures are occuring. However, the amount of fertility decline does vary dramatically by area with such declines being lowest in West Java followed by East Java, Central Java, Jakarta and Bali.

B. <u>Estimates of Childhood Mortality and Children Surviving to Age 5 for Java and Bali.</u>

Childhood mortality rates were still very high in Java and Bali in the late 1960's, with 21 percent of children dying before age 5. Combining mortality with fertility, we estimated that a woman was having 4.18 children surving to age 5. Comparing across regions we found childhood mortality to be highest in West Java (24%) followed by Central Java and Yogyakarta (21%), Bali (20%), Jakarta (19%) and finally

East Java (18%). (See Table 3). Infant mortality rates were 144 per 1000 live births for Java and Bali, ranging from 161 in West Java to 119 in East Java.

Childhood mortality decreased by about 8 percent form 1965-69 to 1970-74. This was primarily due to large declines in Jakarta and Central Java (-21%). Only small declines occured in East Java and Bali (-6%), and no change in West Java and Yogyakarta. Improvements in childhood mortality were found to be related to general improvement in public health facilities.

From the late 1960's to 1972-73 there was little change in average number of children surviving to age 5 (-2.9%). (i.e from 4.18 to 4.06) in Java and Bali. Declines in fertility during this period were offset by declines in childhood mortality. From 1972-73 to 1976 changes in childhood mortality were more than compensated for by changes in fertility. Under such conditions, we would expect the growth rate in Java and Bali to have declined, if adult mortality remained constant. If the growth rate for the 1960's was 1.9 (BPS, 1977), a decrease in the number of children surviving to age 5 from 4.18 to 3.74 could have reduced the growth rate to 1.7.

C. Estimates of Use of Family Planning in Java and Bali.

In 1973 in Java and Bali, 12 percent of married women aged 15-44 had ever used family planning. 11 percent were currently using any method; 9 percent using modern methods (Pill, IUD, Condom, Spermicides); and 8 percent using modern methods obtained from the family planning program. Current use of all methods was highest in Bali (25%), followed by Jakarta (15%), East Java (15%), Yogyakarta (13%), Central Java (10%) and West Java (6%). (Table 4).

In 1976 in Java and Bali 39 percent of married women aged 15-44 had ever used family planning. 28 percent were currently using any method, 23 percent using modern methods, and 21 percent using modern methods obtained from the family planning program. Approximately 1 in 4 married women were trying to prevent pregnancy. Current use of modern methods was highest in Bali (38%), followed by East Java (29%), Central Java (26%), Jakarta and Yogyakarta (19%) and West Java (15%).

Current use of family planning, especially modern methods has dramatically increased from 1973 to 1976. The family planning program is currently (1976) supplying 75 percent of all methods used, and more importantly 90 percent of all modern methods used. (Table 4). Comparing estimates of family planning program users provided by survey and BKKBN (National Family Planning Program) figures, we can support the validity of the BKKBN service statistics.

D. Evaluating the Impact of the Family Planning Program on Fertility in Java and Bali.

Marital fertility declined in Java and Bali by 7 percent (using Coale's I_g measure) from 1967-71 to 1976, based on the 1976 Java Bali Fertility Survey. From 1973 to 1976, use of modern methods of family planning has more than doubled (i.e. from 9 to 23 percent of married women using). A pressing question for the Indonesian government in how much of this fertility decline can be attributed to the national family planning program. Unfortunately without control groups (to allow comparison of changes in fertility where there was no government program with places where there was) we cannot prove that changes in marital fertility were due to the program per se. What we can try and show is whether or not changes in marital fertility were related to changes in modern use of family planning. We can then separately argue (or discuss) what might have caused such changes in use. That is, is it pheasible to argue that use changed because of the family planning program, or would it have changed without.

Our first question, is what relationship can we find between use of family planning and marital fertility in Java and Bali ? We found that marital fertility declined most in Java and Jakarta who had very high levels of marital fertility in 1972-73 and moderate levels of use of family planning during the period 1973 to 1976. When marital fertility is high, improvements in use of family planning should have a greater impact than in areas where fertility is already being supressed by traditional and modern methods of family planning.

Marital fertility declines were smaller in East and Central Java which had moderate levels of marital fertility in 1972-73 and moderate levels of use of family

planning during the period 1973 to 1976. This suggests that part of the increase in use of modern methods of family planning in these areas is merely substitution for traditional means of limiting fertility. However, increased use has had a moderate impact on fertility.

Marital fertility did not appreciably change in West Java, although use of modern methods did increase from 1973 to 1976. However, some reduction of marital fertility was noted for older women (over 30), while fertility for younger women increased. This may be reflecting more stable marriage patterns of younger women, and increased use of family planning by older women.

Increase in use of modern methods of family planning had a more important impact on reducing marital fertility in areas where fertility was high, yet did reduce, although substantially less, fertility in areas which already had lower fertility. These results suggest that proportionate increases in use of family planning in Java and Bali will have less total impact as fertility continues to decline. Such conditions will increase the absolute number of family planning acceptors needed to further reduce fertility.

If use of modern methods of family planning is having an important impact on fertility in Java and Bali, areas with high levels of use should have lower levels of marital fertility and vice versa. For 1976, we can compare levels of use of modern methods with levels of marital fertility (as measured by Coale's I_g Index). (See Figure 1). We find a strong negative relationship between use of modern methods by married women and marital fertility. This suggests a causal relationship between use of modern methods and lower marital fertility. The same relation also occurs when we compare use of modern program methods and marital fertility.

An inconsistant relationship occurs when we compare use of all methods (i.e. including traditional methods) and marital fertility. This suggests that use of traditional methods (especially in Jakarta and Yogyakarta) is not substantially reducing marital fertility. Perhaps traditional users are older and/or subfecund women; or traditional methods because of their lower effectiveness do not provide much protection.

We found a strong negative relationship between use of modern methods and levels of marital fertility in 1976; and that increased use of modern methods had some impact on limiting marital fertility in Java and Bali from 1972-3 to 1976. The next step is to discuss "why" such levels of use of family planning increased from 1973 to 1976. There are two possible explanations. First, social and economic development generated a latent demand for family planning and lower fertility. This latent demand would have been filled with or without the government family planning program. Second, the national family planning program through it's active program both generated demand for family planning while providing access to supplies which would not have been available on a mass basis without the program.

Most likely the truth falls somewhere in between the above arguements. The national family planning program had an important role in improving use of contraceptions, but their task was facilitated by improvements in basic social and economic conditions. Importantly, use of modern methods of family planning is limiting marital fertility in Java and Bali.

Table 1. Estimates of Total Fertility Rates for Java and Bali based on the 1973 Fertility Mortality Survey, 1971 Census and 1976 Java Bali Fertility Survey (SUPAS III).

Source and Year (s)	Total Fertility Rates Region						
	West Java	Jakarta	Central Java	Yogya-karta	East Java	Bali	Total (Java-Bali)
1973 FM Survey[1]							
1965-70	6 6	NA	5.3[2]	NA	5.0	5.9	5.5
1965-70 (Revised)	6.1	NA	5.0[2]	NA	4.4	5.8	5.1
1971 Census[3]							
1967-70	5.9	5.1	5.3	4.7	4.7	5.8	5.2
1976 JBF Survey[4]							
1967-71	6.0	5.9	5.3	4.4	4.6	5.8	5.3
1972-1973	5.8	5.4	5.0	4.1	4.4	5.2	5.0
1976 (Preg. Status)[5]	5.3	4.5	4.4	4.4	3.9	3.8	4.5
1976 (Linear)[6]	5.5	4.6	4.4	3.5	4.0	4.3	4.6

1). See McDonald, Yasin & Jones, Levels and Trends in Fertility and Childhood Mortality in Indonesia, 1976, pg. 49 and pg. 34. Revised estimate multiplies estimated age specific marital fertility rates (pg. 34) times proportion women currently married from 1971 Census.

2). FM Survey estimate for Central Java includes Yogyakarta.

3). See Central Bureau of Statistics, Estimates of Fertility and Mortality in Indonesia Based on the 1971 Population Census, 1976, pg. 1-12.

4). 1967-71 estimates obtained by multiplying 1967-71 age specific marital fertility rates (Table 3) times proportion women currently married by age from 1971 Census. 1972-73 estimates obtained by multiplying 1972-73 ASMFR's times proportion currently married by age interpolated from 1971 Census and 1976 SUPAS I estimates.

5). For method see Sinquefield, "Estimating Fertility from Data on Current Pregnancy Status on Women", April, 1977. 1976 estimate obtained my multiplying ASMFR's from 1976 times proportion currently married by age from 1976 Intercensal Census (SUPAS I).

6). Projected linear decline based on estimates from JBF Survey for 1967-71 and 1972-73. The figure is a December 1976 estimate, to match the 1976 pregnancy status estimate.

Table 4. Estimates of Crude Birth Rates in Java and Bali, late 1960's through early's.

Source and Year (s)	Crude Birth Rate Region						
	West Java	Jakarta	Central Java	Yogyakarta	East Java	Bali	Total (Java-Bali)
FM Survey							
1965-70	48	NA	38	NA	38	41	41
1965-70 (Revised)	44	NA	36	NA	33	39	38
1971 Census							
1967-71	44	43	38	32	36	42	39
1976 JBF Survey							
1967-71	43	45	37	29	35	39	38
1972-73	42	44	35	26	32	36	36
1976							
a). constant marital fertility changing marriage patterns	42	42	35	28-29	34	37-38	37
b). constant marriage patterns changing marital fertility	42	43	35	31	32	29	36
c). both change marriage patterns & marital fertility	39-40	32	30	30	28	34	

** Crude birth rates are calculated using appropriate ASFR's found in Table 2 and estimates of population by age and sex (Sinquefield and Yunus, 1976, Appendix A). Crude Birth Rates for the late 1960's use 1970 estimated population figures, CBR's for 1972-73 use 1973 population estimates, and CBR's for 1976 use 1976 population estimates.

For 1976 we provide three estimates of CBR's for 1976. The first estimate uses 1967-71 estimates of age specific marital fertility rates and 1976 Census estimates of proportion currently married to generate age specific fertility rates (constant fertility). The second estimate uses 1976 estimates of ASMFR's and 1971 Census estimates of proportion currently married to generate ASFR's. (Constant Marriage). The third estimate, uses 1976 estimates of ASMFR's and 1976 Census estimates of porportion currently married to generate ASFR's. (Changing marriage patterns and marital fertility).

Table 3. Estimates of Average Number of Children Surviving to Age 5 (T.F.R.*q_5) in Java and Bali, based on the 1976 Java Bali Fertility Survey.

Years	Average Number of Children Surviving to Age 5						
	Region						
	West Java	Jakarta	Central Java	Yogyakarta	East Java	Bali	Total (Java-Bali)
1967-71							
T.F.R.[1]	6.01	5.89	5.34	4.39	4.58	5.83	5.29
q(5)	.242	.187	.209	219	.176	198	206
TFR *q(5)	4.56	4.79	4.22	3.43	3.77	4.68	4.18
1972-73							
T.F.R.[2]	5.83	5.40	4.97	4.06	4.36	5.23	4.51
q(5)	.243	143	165	213	168	186	189
T.F.R.*q(5)	4.41	4.60	4.15	3.20	3.63	4.26	4.06
1976	5.34	4.54	4.41	4.44	3.92	3.84	4.51
T.F.R.[3]	219	133	149	192	151	167	170
q(5)							
T.F.R.*q(5)	4.17	3.94	3.75	3.59	3.33	3.20	3.74
% Change							
1967-71 to 1976	-8.6	-17.7	-11.1	+ 4.7	-11.7	-31.6	-10.5
1967-71 to 1972-73	-3.3	- 4.0	- 1.7	- 6.7	- 3.7	- 9.0	- 2.9
1972-73 to 1976	-5.4	-14.0	- 9.6	+12.2	- 8.3	-24.9	- 7.9

1). Uses adjusted estimates from 1965-69. See Table 5.

2). Uses adjusted estimates from 1970-74. See Table 5.

3). Uses adjusted estimates from 1970-74 minus 10%.

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1). Uses adjusted estimates from 1965-69. See Table 5.

2). Uses adjusted estimates from 1970-74. See Table 5.

3). Uses adjusted estimates from 1970-74 minus 10%.

Table 4. Estimates of Use of Family Planning by Currently Married Women Aged 15-44 in Java and Bali By Regions Based on the 1973 FM Survey and the 1976 JBF Survey: 1) Percent Ever Use; 2) Percent Currently Using All Methods; 3) Percent Currently Using Modern Methods; 4) Percent Currently Using Modern Program Methods; 5) Percent Total User Who are Using Modern Methods; 6) Percent of Total Users who are Using Modern Program Methods; Percent of Modern Method Users who are Using Modern Program Methods.

Year	Region: Total	West Java	Jakarta	Central Java	Yogyakarta	East Java	Bali
% Ever Use Family Planning/MWRA							
1976	38.7	25.6	36.3	38.6	57.0	48.0	45.9
1973	12.4	7.9	NA	11.5	14.0	16.0	26.1
% Currently Using All Method of Family Planning/MWRA							
1976	28.0	17.4	29.1	29.8	43.1	33.8	39.1
1973	10.5	5.9	15.5 3)	10.1	12.8	14.6	23.0
% Currently Using Modern Methods of Family Planning/MWRA							
1976	23.4	14.9	19.9	26.0	19.9	29.2	38.3
1973	9.4	5.5	10.6 3)	9 5	11.1	13.6	21.0
% Currently Using Modern Methods From Program/MWRA							
1976 5)	20.5	12.1	14.2	23.0	17.8	26.3	33.3
1973	8.5	4.2	7.4 3)	8.1	8.3 4)	11.5	19.4
Modern Methods/Total Methods							
1976	.84	.85	.68	.87	.35	.89	.98
1973	.90	.89	NA	.94	.87	.93	.90
Modern Methods From Program/Total Methods							
1976	.73	.63	.48	.68	.46	.69	.85
1973	.81	.68	NA	.80	NA	.79	.84
Modern Methods From Program/Modern Methods							
1976	.88	.81	.71	.89	.89	.90	.88
1973	.90	.76	NA	.85	NA	.85	.93

1). FM Survey estimates of Central Java include Yogyakarta.

2). FM Survey estimates of Yogyakarta based on women aged 15-49.

3). 1973 Jakarta estimates use BKKBN estimates of 7.4% program users in March 1973, and assume .7 of all modern users obtained method from program, and .684 of all method users are modern methods. (See Table II footnotes).

4). Yogyakarta estimate assumes, 75 of current modern users obtained method from program.

** For more details on how estimates were obtained see Table 9-11.
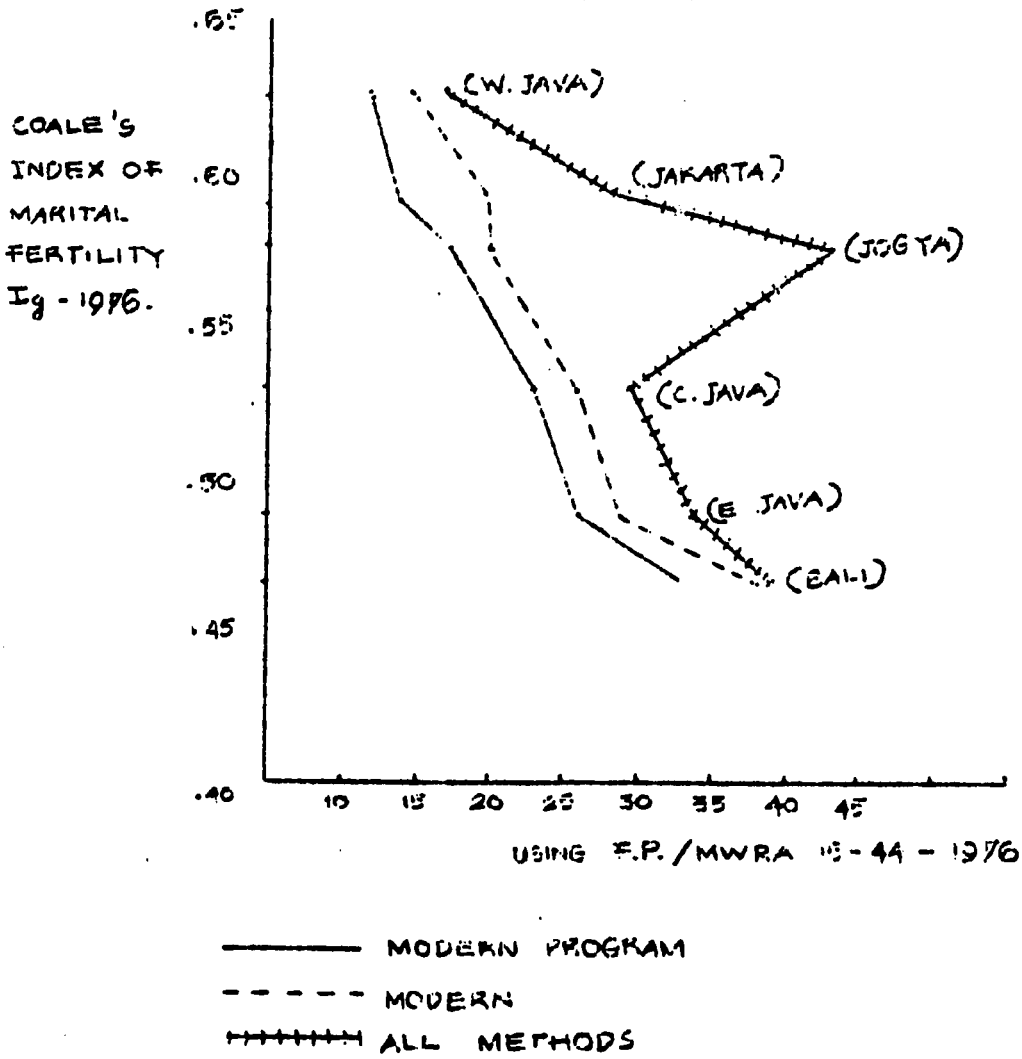
Figure 4. Comparison of Marital Fertility (I_g) and Proportion Married Women Using Planning: All methods, Modern Method, Modern Program Methods by Region 1976, based on 1976 JBF Survey.