Document of
The World Bank

Report No: 29511

IMPLEMENTATION COMPLETION REPORT
(SCL-41250)

ON A

LOAN

IN THE AMOUNT OF US$ 18.8 MILLION

TO THE REPUBLIC OF

INDONESIA

FOR THE INTENSIFIED IODINE DEFICIENCY
CONTROL PROJECT

June 25, 2004

Health, Nutrition, and Population Sector Unit
Human Development Department
East Asia and Pacific Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective as of December 31, 2003)

Currency Unit	=	Indonesia Rupiah (Rp)
Rp 1,000	=	US$ 0.118
US$ 1	=	8,464

FISCAL YEAR
April 1 March 31

ABBREVIATIONS AND ACRONYMS

APPROGAKOB	Association of Iodized Salt Producers
BAPPENAS	National Development Planning Agency
BPS	Central Bureau of Statistics (Biro Pusat Statistik)
CAS	Country Assistance Strategy
CHP	Center for Health Promotion
CPMU	Central Project Management Unit
CPS	Central Project Secretariat
DPMU	District Project Management Unit
ERR	Economic Rate of Return
FRR	Financial Rate of Return
GOI	Government of Indonesia
ICR	Implementation Completion Report
IID	Iodine Deficiency Disorder
IIDC Project	Intensified Iodine Deficiency Control Project
KIO3	Potassium Iodide
MOF	Ministry of Finance
MOH	Ministry of Health
MOHA	Ministry of Home Affairs
MOIT	Ministry of Industry and Trade
NADFC	National Agency for Drug and Food Control
NPV	Net Present Value
NTB	Nusa Tenggara Barat Province
NTT	Nusa Tenggara Timur Province
PPMU	Provinvial Project Management Unit
SAR	Staff Appraisal Report
SNI	Indonesian National Standards
SUSENAS	Indonesian National Socio-Economic Survey
TGR	Total Goiter Rate
UIE	Urinary Iodine Excretion

Vice President:	Jemal-ud-din Kassum
Country Director	Andrew D. Steer
Sector Manager	Fadia Saadah
Task Team Leader/Task Manager:	Juliawati Untoro

INDONESIA
INTENSIFIED IODINE DEFICIENCY CONTROL PROJECT

CONTENTS

Project ID: P042540	*Project Name:* ID-IODINE DEF. CONTROL
Team Leader: Juliawati Untoro	*TL Unit:* EASHD
ICR Type: Core ICR	*Report Date: June 25, 2004*

1. Project Data

Name: ID-IODINE DEF. CONTROL
L/C/TF Number: SCL-41250
Country/Department: INDONESIA
Region: East Asia and Pacific Region

Sector/subsector: Health (67%); Central government administration (18%); Other industry (15%)
Theme: Nutrition and food security (P); Gender (S); Rural services and infrastructure (S); Health system performance (S)

KEY DATES		*Original*	*Revised/Actual*
PCD:	09/08/1995	*Effective:*	02/25/1997
Appraisal:	08/12/1996	*MTR:*	04/19/2001
Approval:	12/17/1996	*Closing:*	06/30/2002	12/30/2003

Borrower/Implementing Agency: Republic of Indonesia/Directorate of Community Nutrition; Republic of Indonesia/Ministry of Health
Other Partners:

STAFF	Current	At Appraisal
Vice President:	Jemal-ud-din Kassum	Nicholas Hope
Country Director:	Andrew D. Steer	Dennis DeTray
Sector Manager:	Emmanuel Y. Jimenez	Marianne Haug
Team Leader at ICR:	Juliawati Untoro	
ICR Primary Author:	Jed Friedman	

2. Principal Performance Ratings

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HL=Highly Likely, L=Likely, UN=Unlikely, HUN=Highly Unlikely, HU=Highly Unsatisfactory, H=High, SU=Substantial, M=Modest, N=Negligible)

Outcome: S
Sustainability: L
Institutional Development Impact: SU
Bank Performance: S
Borrower Performance: S

	QAG (if available)	ICR
Quality at Entry:		S
Project at Risk at Any Time:	No	

3. Assessment of Development Objective and Design, and of Quality at Entry

3.1 Original Objective:

Iodine deficiency disorder (IDD) is a persistent and serious health threat in much of the world, including Indonesia. IDD, which occurs in all provinces in Indonesia to varying degrees, is both a significant and a preventable disorder that increases neonatal and infant mortality and reduces mental ability. As such it can be an important factor limiting education attainment, work productivity, and national development. By the mid-1990s at least a third, and perhaps as much as half, of the Indonesian population was deemed to be at risk of iodine deficiency.

At the time of project design, Indonesia did have some experience in treating IDD through the injection of iodized oil and the distribution of iodized capsules. However the coverage of target populations stood at only 7 per cent for injections and less than 4 per cent for capsules. Clearly, effectiveness was low. Fortification of salt with iodine is a more cost-effective means of treating IDD and some salt consumed in Indonesia was indeed iodized – in 1995, roughly 50% of Indonesian households consumed iodized salt. Public knowledge of iodized salt was also low – again approximately half of all households were aware of the health benefits of iodized salt.

The health and economic importance of reducing IDD combined with the relative lack of progress combating IDD led the Government of Indonesia (GOI) and the World Bank to design the Intensified Iodine Deficiency Control Project (IIDC Project) which was launched in 1997 at a total estimated cost of USD 43.3 million, supported by the World Bank Loan of USD 28.5 million. The IIDC Project involved the actions of several ministries due to the necessity of cross-sectoral coordination when working to reduce IDD. Participating ministries included the Ministry of Health (MOH), Ministry of Industry and Trade (MOIT), Ministry of Home Affairs (MOHA), and the National Agency for Drug and Food Control (NADFC) with implementing agencies consisting of the Directorate of Community Nutrition, the Center for Health Promotion, Directorate of Down Stream Chemical Based Industry, Directorate of Regional Development Planning, and Directorate of Food Inspection and Certification.

The goal of the IIDC Project was to lower the prevalence of IDD in Indonesia. This was approached through five distinct project components: (i) monitoring the iodine status of the community, (ii) increasing the demand for iodized salt, (iii) increasing the supply of iodized salt, (iv) improving the targeted distribution of iodine capsules, and (v) strengthening inter-ministerial policy and program coordination for the control of IDD. The objectives of the project were also consistent with the government commitment under the resolution of the World Summit for Children in 1990 to virtually eliminate IDD through Universal Salt Iodization by the year 2000, and hence the project received strong government support throughout the duration.

Due to a project emphasis on the importance of monitoring data, many of the original performance indicators adopted in the SAR contained explicit performance benchmarks. These benchmarks included the following:

1. Goiter prevalence, for the overall goal of lowered IDD prevalence: 50% reduction in the Total Goiter Rate (TGR) of highly endemic provinces by the end of the project.

2. Proportion of households consuming salt with adequate iodine levels, for the objective of increased iodized salt demand: 80% of households by 1999.

3. Proportion of households consuming salt with adequate iodine levels, for the objective of increased

iodized salt production: 80% of households by 1999.

4. Proportion of capsules correctly targeted, for the objective of targeted distribution of capsules: 60% by 1999.

5. Effective and regular meetings between Bappenas and the relevant ministries and directorates, for the objective of improved coordination of activities by 1998.

The main focus on the fortification of salt would allow the health sector to increase the proportion of the population treated as well as eliminate the use of expensive iodine capsules, except in those areas with a very high prevalence of IDD. For those areas, the use of capsules was determined to be an important complementary health policy.

Project activities and financing at the beginning of the project went smoothly due to the thorough project preparation. The Central Project Secretariat (CPS) had developed guidelines for the IIDC Project Administration and disseminated these guidelines to all project officials in order to familiarize the project management with World Bank procurement and withdrawal procedures as well as the GOI regulations. In general, there were no difficulties regarding the procurement and disbursement procedures.

3.2 Revised Objective:

There was no formal revision of the original objectives during implementation of the project. However, soon after project initiation, Indonesia experienced profound economic and political disruptions as a result of the 1997 Financial Crisis. Following the collapse of the Indonesian Rupiah, which lost over 80% of its value in a matter of months during 1997, the Indonesian economy underwent rapid contraction. GDP declined 12 percent in 1998 alone and the economy did not begin to grow again until 2000. Alongside this contraction, Indonesia witnessed massive price increases. Food prices nearly tripled while overall inflation reached 80% in 1998. This economic upheaval was accompanied by political turmoil, with President Suharto resigning after 3 decades of being in power, that presaged historic changes in the national governmental system including a far-reaching program of political decentralization beginning in 1999. The legacy of the crisis and decentralization program will be critical factors to bear in mind when assessing the efficacy of the IIDC project.

As a result of the crisis and devaluation of the Indonesian Rupiah, there were three amendments of the loan in 1998, 1999 and 2001, respectively. These amendments resulted in the cancellation of USD 2.5 million, USD 6.5 million and USD 0.7 million. In the last amendment, there was also the reallocation of budget into an additional category of expenditure for district grants, a program established in response to the Indonesian decentralization program, and also for an18 month project extension (there was no change to project objectives). The final amended loan was USD 18.8 million and the total disbursement through the last application (No. 48/DJA) was USD 18,777,079.47 or 100% of the amended loan.

3.3 Original Components:

Component 1. Monitoring iodine status of the community
Original cost: USD 6.3 million. (Revised cost: USD 4.1 million.)

This component consisted of several national monitoring and data collection efforts including two iodine deficiency disorder (IDD) surveys and maps, one at the start and one at the end of the project. These surveys map IDD prevalence at the district (Kecamatan) level through the assessment of goiter by

palpation in children in grades 3-4 as well as a urine test of UIE, a standard biomarker of iodine nutritional status. In addition, this component funded salt consumption monitoring at the household level in cooperation with the Central Bureau of Statistics (BPS) through its highly regarded national annual socio-economic household survey (SUSENAS). This component also funded operational research.

Component 2. Increased demand for iodized salt.
Original cost: USD 3.2 million. (Revised cost: USD 2.9 million.)

This component sought to boost demand for iodized salt principally through a mass media campaign (through radio and TV) highlighting the health benefits of iodine fortified salt as well as a more focused and in-depth campaign in highly endemic areas. In addition this component supported social enforcement activities at the local level, such as NGO monitoring of local markets, designed to raise public awareness of the benefits of iodized salt. This component also promoted iodized capsule consumption in endemic areas principally through pre-distribution promotion and publicity.

Component 3. Increased supply of iodized salt.
Original cost: USD 8.9 million. (Revised cost: USD 7.5 million.)

This component involved numerous activities aimed at improving the availability of iodized salt. Sub-components included (a) monitoring the iodine content of salt at the producer level (with monitoring conducted by MOIT) and at the distribution level (under the responsibility of NADFC), (b) enforcement of salt iodization regulations through the encouragement of industrial self-enforcement as well as MOIT enforcement, (c) strengthening a rules based approach concerning the minimum standards set by government, (d) improving the quality of salt produced by salt farmers through MOIT activities to assist saltfarmers adopt new technques and designs, (e) a salt farmer development program (which encourages the adoption of new technology and management techniques through demonstration trials), and (f) operational research into key salt production issues.

Component 4. Targeted distribution of iodized capsules.
Original cost: USD 9.7 million. (Revised cost: USD 5.6 million.)

This component was meant to fund the annual distribution of iodized capsules in endemic communities. Kecamatans were targeted based on the IDD Prevalence survey funded under Component 1. World Bank funds would only be spent on supporting the distribution of capsules, while GOI funds would purchase the capsules.

Component 5. Inter-ministerial policy and program coordination for control of iodine deficiency.
Original cost: USD 5.8 million. (Revised cost: USD 5.3 million.)

This component seeks inter-ministerial coordination of project activities and policy, and identification of clear lines of accountability and responsibility – a critical component since project activity was required in at least four ministries. This component also funded periodic and independent checks of all data and assessment of the national iodine situation. The Central Project Management Unit (CPMU) was housed with MOH at the Directorate of Community Nutrition. A steering committee composed of members from MOH, MOIT, MOHA, Bappenas, and MOF served as an advisory body for the Project Director.

The coordinated design of the components are clearly relevant to the objectives described above. To increase consumption of iodine fortified salt, the project concentrated on both demand-side and supply-side factors aiming to overcome both the negative externalities of limited information concerning the benefits of

iodized foods, as well as the technological constraints facing salt producers. At the same time the project sought to safeguard the populations most at risk of IDD through support to the pre-existing program of iodine capsule distribution by concentrating on the targeting of such capsules in endemic areas.

The project also devoted significant resources to the monitoring of population iodine status, as well as monitoring the supply of iodized salt at the producer and market level and the consumption of iodized salt in the home. The creation of innovative data bases allowed the project to track key success indicators and identify and address relevant problems in a timely fashion.

Realizing that an effective iodine disorder control project will be necessarily inter-ministerial, including MOH which had overall oversight of the project, MOIT and NADFC which focused on iodized salt supply issues, MOHA, and the planning ministry, the project devoted sufficient resources to ensure that overall implementation would be managed effectively.

In all of these regards, the project incorporated lessons learned from previous IDD control projects such as the 1994 China IDD project, however it situated these lessons in the distinctly Indonesian institutional context. The project design correctly identified some of the key risks such as anticipating insufficient demand for iodized salt (due to lack of public of awareness) and hence aimed to increase demand through social marketing. It anticipated the possibility of the inadequate government coordination of various ministries and hence focused very closely on this aspect in project design. The project design was also concerned with the sustainability of the anti-IDD efforts after project closing, and focused on promoting a GOI exit strategy from relatively early on in the project.

Project design was also concerned with risks that might limit improvement in the supply of iodized salt (due to failure of component 3). However the project did not specifically consider ensuring adequate supplies of potassium iodide (KIO3), which is a key input in the salt iodization process. Indeed the lack of attention to this matter turned out to be one of the major hurdles towards improving the supply of iodized salt. Only at a later date did project efforts identify this key constraint and work to correct it. Another risk largely unanticipated by the project was the political risk of the profound government change following the financial and political crisis. The subsequent program of political decentralization forced the project to adjust numerous operational aspects and to lead the Indonesian health system in an experiment of how to conduct nutritional policy in a decentralized context.

3.4 Revised Components:

The IIDC Project's chief response to the new decentralized context was the creation of a district block grant program. The need for such an approach was succinctly described in a March 2000 Aide Memoire which conveyed that the project was at a "critical stage where the focus of the next phase of activities will occur at the provincial and district (Kabupaten) levels, with officials at these levels playing a significant role in all aspects of the project including enforcement of salt regulations". This new district bottom-up approach allowed the district level implementing agency (DPMU) to manage its own budget (based on an agreed proposal). The Project Secretariat wrote proposal guidelines to assist the districts in choosing components which fit local IDD challenges.

As part of the block grant program, each Local IDD Team needed to define its strategy on legal and social enforcement of iodization. The Provincial IDD Team also needed to define strategy, regulation, and mechanisms for cross-district IDD issues. In response to these issues, some joint approaches involving several or more districts were meant to be initiated. A national workshop aimed to improve the quality of the proposals was held in November 2001. This approach was formalized under the third loan amendment where was a significant change in loan category incorporated the new district IDD block grant component.

The original project components were not changed – the innovation was that districts were now responsible for making decisions on the scale and mix of components and that the project can achieve its objectives in the new institutional environment.

3.5 Quality at Entry:

Overall the project involved a range of policy and institutional innovations and posited both attainable and sustainable goals in light of international experience with IDD control. The project's objectives were closely linked with the general objectives of various Indonesian CASs. The project concept was sound in that it approached the problem of low iodized salt consumption from both the supply and demand perspective while simultaneously assuring more than adequate monitoring by which to track progress. The project's objective was inherently pro-poor since IDD, and malnutrition in general, is largely a disease burden of the poor. The project design also contained a strong component of institutional development with a focus on creating cross-ministerial collaboration and the development of a comprehensive exit strategy. Environmental and social safeguards were adequately addressed. The quality at entry is deemed satisfactory.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

Achievement of objectives and outputs under the IIDC project was deemed satisfactory, especially in light of the complications arising from the profound and unanticipated economic and political changes as a result of the financial crisis. The crisis served to delay the full implementation of the project as well as reorient efforts as, following decentralization, districts suddenly became the front-line provider of health services filling a role previously provided by the central government.

A major effort in this project involved monitoring and surveillance, including the collection of innovative survey data, and as such there is an abundance of program related indicators with which to assess the achievement of objectives and outputs.

There were two health indicators used to measure the overall achievement of the project i.e. the reduction in the prevalence of IDD. These two indicators, the Total Goiter Rate (TGR) and Urinary Iodine Excretion (UIE), were collected at both the start of the project in 1998 and at the close in 2003. Comparison of health indicators measured both pre- and post-project would presumably yield an estimate of the impact of the project. However some methodological issues complicate a straightforward comparison of health indicators in the two periods, which will be discussed shortly.

The overall TGR data indicates that there was a 35.2% reduction of the TGR in severe and moderate endemic provinces from the beginning of the project. The goal in the SAR was a 50% reduction and while this result doesn't quite attain that goal it is still represents a substantial health gain, especially if we look at how individual endemic provinces fared under the IIDC project. At the beginning of the project, four provinces were categorized as having severe or moderate IDD. At the close of the project, 2 out of 4 provinces had reached that target – West Sumatra and South East Sulawesi. Of the remaining two provinces, NTT experienced a significant reduction of 25.5%. Only Maluku remained categorized as a severely endemic IDD province with a reduction of only 4.5%, and project operations in Maluku were severely constrained due to ongoing civil conflict.

We can also look at the decline in the TGR at the district level, which has become in many ways the policy

relevant level of administrative aggregation in light of the decentralization program. The TGR in severely endemic districts declined from 44.1% in 1998 to 25.4% in 2003, a reduction of over 40% and close to the 50% reduction target in the SAR. For the IDD block grants, TGR was reduced from 21.2% to 17.1%. For highly endemic IDD block grant districts, it fell from 31.4% to 17.7%.

In terms of TGR methodological issues, the first concerns the degree of accuracy with which the TGR is assessed in subjects. Goiters are typically identified through the palpation method, where health professionals lay their hands on the throats of patients. This method, even when conducted by highly trained physicians, results in large discrepancies across assessors. In the IDD project, there were low rates of agreement across the 2003 assessors when assessing identical cases. Assessors also had high probabilities of 34% for failing to identify a goiter and 18% for misclassifying a healthy subject as containing a goiter.

Further complications include the fact that the presence of goiter can reflect an individual's nutritional status at a point 3-5 years earlier. Hence goiter rates may persist even in the presence of effective IDD control efforts if there is insufficient time delay between initiation of IDD control efforts and assessment. Another interpretative difficulty relates to the fact that the comparator populations in the two TGR survey years are not equivalent. In 1998, the TGR data was collected from children 6-12 years old as well as pregnant women under 35 years of age. In 2003, the TGR was estimated only for children 8-10 years of age. The rates of decline in the TGR are largely similar if we restrict our attention to children of equivalent ages in both years.

These complications perhaps explain why there was no change in the estimated *national* TGR between the two periods. The TGR for school children in 1996 it was 9.8%, while in 2003 was 11.1% - a difference in prevalence that is not significant at standard statistical levels. However the 35.2% reduction of the TGR in severe and moderate endemic provinces mentioned above is likely to be significant since TGR assessment is more accurate in highly prevalent areas.

The other test of iodine status, Urinary Iodine Excretion (UIE), tends to be much more reliable than the prevalence of goiter, as assessed with the palpation method, since UIE results rely on the laboratory assessment of urine samples. Unlike TGR, UIE reflects contemporaneous nutritional status. However one complication remains, and that concerns sample composition – UIE rates in 1996 were based on pregnant women while in 2003 on children 8-10 years. It is currently unclear how this difference may affect the interpretation of changes in measured UIE over time.

The median UIE at the national level was 229 g/L (a level more than adequate) while the baseline was 147 g/L (deemed adequate) or an increase of more than 50%. This is a clear indication of better iodine intake of the community in 2003 than 6 years previously. 22.4% of districts had inadequate levels of UIE in 1998 but this fell to 5.2% in 2003. For the IDD block grant districts, UIE increased from 170 to 320 g/L and the proportion of inadequate districts decreased from 39.1% to 16.7% For severely endemic areas, UIE levels increased from 80 to 202.

Based on the available health data spanning project implementation, there has been continued overall progress toward the development objectives and the iodine status of the population appears to be significantly improved, especially in many of the previously endemic areas of Indonesia.

Although the overall achievement is satisfactory, the difficulties presented by decentralization affected some of the components much more than other components, and so achievement of objectives under certain components failed to reach expectations and was deemed unsatisfactory (see below).

4.2 Outputs by components:

Component I : Monitoring the iodine status of the community

The outputs of this component are satisfactory.

This component was responsible for three main outputs:

(i) A complete baseline dataset and map of IDD in Indonesia (both TGR and UIE measures) conducted in 1998. This data was critical for policymakers by providing an overview of the extent of the IDD problem in Indonesia, which in turn was used as a basis for priority setting of the IDD control strategy and the targeting of iodine capsules.

(ii) The generation of a highly reliable data series on iodized salt consumption collected through SUSENAS (1997 – 2003) at the household level. This database is nationally representative at the district level and typically comprises 50,000 households in each year. This data allows the assessment of trends in the consumption of iodized salt on an annual basis and, further, can relate the consumption of iodized salt to other household characteristics such as poverty status or the education of the household members. This data also assesses the household knowledge of the health benefits of iodized salt. BPS will continue to collect this data even after the close of the project with support from GOI.

(iii) A complete dataset and map of the iodine status of community (both TGR and UIE measures) at the close of the project in 2003. This data enabled assessments of the impact of the IIDC project in relation to baseline information.

Component II: Increasing the consumption of iodized salt

The outputs of this component are satisfactory. Each output is discussed in turn.

(i) Household consumption rates of iodized salt.

Iodized salt consumption increased from 58.1% in 1996 to 73.2% in 2003, as determined by the project supported SUSENAS data. Although the consumption rate in 2003 fell short of the SAR target of 80%, the increase in consumption represents clear and significant improvements that would be unlikely achieved without the efforts of IDD control. Increased consumption of iodized salt is most likely the principal cause of increased population health status mentioned above. The figure in Annex 1 shows the year on year household consumption rates along with key events that most likely in part determined these rates.

(ii) Nutrition promotion and education.

Information and education activities were principally the responsibility of the Center for Health Promotion (CHP), MOH. It's aims were to: 1) improve the community's awareness of the importance of iodine for human health, 2) promote attitudinal changes and practices of the community with respect to the consumption of iodized salt, and 3) improve the awareness and commitment of public policy makers and industry to support the improvement of iodized salt consumption by the community. Public campaigns utilizing various type of media such as TV, radio, printed materials, banners, and billboards were conducted in each of the project years. Promotional messages were delivered through TV and radio advertisements, interactive television and radio talk shows, short film dramas, culturally traditional shows, an IDD news letter, and a handbook on IDD control.

The majority of this component's expenditures were spent for a media campaign involving TV spots, radio broadcasting, and printed media. The media campaign involved famous comedians/presenters, and was at first only targeted to increase general community awareness. In 2001, CHP developed TV spots specifically targeted to convey relevant messages to disparate groups: i) salt farmers, ii) salt industry, iii) schools, iv) distributors, and v) housewives.

In addition, many districts that received block grants collaborated with local radio stations, local print media, and local workshops to increase local awareness. Intensive campaigns linked to iodized oil capsule distribution were also conducted in endemic areas.

The latest SUSENAS survey data indicated that 73% people at national level and 90% in districts receiving IDD block grant were aware of the benefits of iodized salt for health. This marked increase in awareness from the baseline level of 50% indicates the success of the health promotion and education efforts, especially in the block grant districts. Since households that are more aware of the benefits of iodized salt are also more likely to consume iodized salt, it is likely that this increased awareness translated into healthier nutrition practices. Interviews with focus groups found that, in general, TV was a particularly effective medium for Javanese residents while radio as an effective medium for off-Java residents. Health workers were also an important source of information in both Java and off-Java.

In addition to knowledge concerning fortified salt, 66% of people in districts receiving IDD block grant were aware of the benefits of iodized oil capsules for health, again a significant increase over the baseline levels. Posters and counseling were particularly effective in increasing knowledge about iodized capsules in the district block grant areas. On average 66% of women reported awareness of the benefits of capsules in endemic block grant districts compared with 14% of women overall, indicating in particular the effectiveness of targeted health promotion and education. 97% of the women aware of the benefits of capsules reported the necessity of consuming iodized oil capsules, especially while pregnant. However only 67% report ever having consumed capsules and 39% report difficulty in locating capsules. These supply difficulties will be discussed under Component 4.

(iii) Social enforcement.

Social enforcement activities sought to: (i) increase the commitment of local governmental authorities in supporting IDD control, and (ii) increase the involvement of salt producers, retailers, community leaders as well as NGOs on efforts to promote the consumption of iodized salt of the community. Activities included establishing partnerships with NGOs and mass media organizations, the distribution of media guidance tools to each district, and meetings with producer associations to discuss legal and social enforcement strategies.

Starting in 2001, social enforcement workshops were held with local governments of the block grant districts where social enforcement materials and manuals were distributed. Districts were then allowed to pursue social enforcement activities most suited to local conditions – the adopted strategies were quite diverse. These strategies included the establishment of alternative markets that sold only iodized salt or the encouragement of religious leaders to participate in iodized salt promotion. Central level follow-up a year later found that local government advocacy had been conducted with regulators at all levels of provincial and district government. However continued advocacy to producers, salt farmers, and distributors was still needed as evidenced by the persistence of local distributors in certain block grant districts in offering non-iodized salt.

Component 3: Increasing the supply of iodized salt

The outputs of this component are satisfactory. Each output is discussed in turn.

(i) Activities under Ministry of Industry and Trade (MOIT).

These outputs included the following:

- MOIT provided training and technical assistance to salt processors on how to improve salt quality to comply with SNI requirements. Focus of training was on quality control management. The number of salt producers receiving Indonesian National Standard (SNI) certificates increased from 40 in 1999 to 236 in 2003. Even though the requirement of SNI is difficult for small producers to attain, outreach and education resulted in considerable progress.
- 176 salt producers were trained with a salt quality management system during 2000 – 2002.
- The project initially supported 7 demonstration plots (Demplots). Demplots hope to i) increase salt production per hectare of salt field, ii) improve the quality of crude salt so that it is suitable for iodization, iii) improve the income of salt farmers, and iv) promote participation of local governmental authorities in handling the salt industry. Demplots also received equipment that aids quality salt production and iodization. Some Demplots have clearly resulted in improved quality and increased salt production which in turn resulted in increased income for the participating small salt producers. The original 7 Demplots were based on 5 ha of land, which made it difficult for local communities to adopt since the average land holdings of salt farmers is closer to 0.5 ha. Demplots were successful, however, in demonstrating an increase in output of 15-45%. The benefit/cost ratio of production was also much higher after the initiation of Demplot than before – Demplots experienced about a 20-25% increase in productivity. In 2002, Demplots were expanded into 10 more districts and the acreage of the Demplot was reduced to 3 Ha, bringing them closer to true replicability. Nevertheless, adoption of Demplots by farmers is an open question that needs to be tracked in the future.
- Salt processing units have been procured by district grants in 17 salt producing districts, iodization machines were procured in 27 districts, and mini laboratories have been developed in all provinces to monitor salt quality and iodine content.
- MOIT established an extensive data base from monitoring efforts at the producer level. For example, in 2000 MOIT tested 360 brands of salt from 252 producers in all provinces and found 72% of them to have adequate iodization levels (>=30 ppm).The website *www.infogaram.com* has been developed as an integrated database system on salt monitoring and information dissemination to all salt producers.
- Although not an original aspect of this component, project efforts under MOIT were made in order to ensure the availability of Potassium Iodide (KIO3), the key chemical input in the iodization process. PT Kimia Farma, a state-owned pharmaceutical company, is the only producer of KIO3 in Indonesia. Various World Bank missions found that KIO3 was frequently unavailable in local pharmacies at the time required by salt processors and this lack served as a key constraint in efforts to increase the supply of iodized salt. In addition, the only retail quantity available was a 2kg package for an average price of 400,000 Rupiah, which made it too expensive for many small salt farmers or share farmers. The observed shortfall in KIO3 was not a problem of capacity- Kimia Farma can produce 60 tons/year and the projected national need is only 50 tons/year. In response to this, MOIT led efforts to: (a) provide a demand projection for KIO3, (b) coordinate the procurement and distribution of KIO3 between Kimia Farma, the Salt Producers Association, and the local governments, (c) adjust the size of packaging for the affordability of small producers. These efforts resulted in an MOU between MOIT, Kimia Farma, MOH, and the Association of Iodized Salt Producers (APROGAKOB) to ensure the adequate supply of KIO3 as well as to market a 0.5kg bottle of KIO3 in addition to the 2kg bottle. After this agreement, the production of KIO3 increased by 75%, settling at a level that appears adequate for current needs. KIO3 was made available through

APROGAKOB offices as well as pharmacies. MOIT also developed a KIO3 monitoring system at different levels of government and trained officials in this system. After the MOU was finalized (in 2002) subsequent SUSENAS surveys found that the proportion of households consuming iodized salt increased from 65.4% to 72.3% in the final two years of the project, thus suggesting the critical importance of ensuring adequate supplies of KIO3.

(ii) Activities under National Agency on Food and Drug Control (NADFC).

NADFC was responsible for conducting routine monitoring of salt iodine content at the market or retail level. At the start of the project 56.8% of salt samples contained adequate iodine levels. By 2003 this figure rose to 68.6%. Results of monitoring conducted by this agency have been useful for three purposes: (i) as a basis for local government to issue warning letters to producers of branded iodized salt that have not complied with the SNI requirements, (ii) as a guidance for producers of "sub-standard" iodized salt in improving the quality of their products to meet the SNI requirements, (iii) as an evidence base for social enforcement as well as law enforcement activities.

Major activities on law enforcement were implemented by NADFC (as well as MOIT). NADFC issued 3000 warning letters to producers whose salt products did not meet requirements, however legal enforcement was typically not pursued given the poor legal environment. Many provinces and districts also issued decrees and regulations concerning iodized salt. And some governors, such as in East Java, initiated legal and enforcement cooperation with neighboring provinces.

(iii) Activities under Directorate of Community Nutrition, Ministry of Health.

Community Based Salt Monitoring was conducted at schools using school children to bring in household salt samples. School teachers were trained in the relatively straightforward technique of testing household salt for iodine and then recorded the results of the test on the samples the children brought from home. Results of this monitoring were useful in order to: (i) promote the importance of iodized salt for health among school children , (ii) encourage the participation of the community in monitoring the supply of iodized salt, and (iii) invite the attention of local government to take follow up action. These school based tests found an increase in the household consumption of iodized salt roughly equal to that found in the SUSENAS data.

Component 4 : Targeted Distribution of Iodized Capsules

The output of this component is judged to be unsatisfactory.

The distribution of iodized capsules was initiated in 1992, well before the start of the IIDC project. Until 1999, procurement (which, again, was not funded by Bank contributions) was centrally managed and not based on accurate projections of need. Indeed, the procurement of capsules was typically greater than the projected need before a re-evaluation of need was conducted under the auspices of the project.

The difficulties with this component were greatly compounded after the national program of political decentralization transferred the responsibility of capsule procurement and distribution to the local governments. Many local governments did not make this activity a priority and indeed many even failed to report procurement and distribution information to the central Ministry of Health. This breakdown in health reporting systems was not unique to the distribution of iodized capsules but rather extended to almost every aspect of health reporting after decentralization. In addition the districts were not able to allocate adequate local government budget to capsule purchases due to budget constraints and a lack of understanding of the

magnitude of the problem.

The district level neglect of accurate targeting as well as lack of reporting led to poor performance in this component. The coverage of iodized oil capsules for women of child bearing age in moderate and severely endemic areas reached only 33% in 2003 (the target was 60% by the end of 1998). For children in severely endemic areas, only 48% received capsules. There was also wide geographic variation in coverage- Maluku only correctly targeted 5% of women of child bearing age (again, surely the local conflict in Maluku played a role). On the other hand, concerted efforts were made to improve capsule targeting in the IDD block grant districts where coverage reached 46% for women of child bearing age and more than 80% for children. Clearly the more focused approach and oversight of the district block grant program significantly improved the performance of this component in those localities.

Many factors contributed to the low overall coverage of capsule distribution such as (i) lack of a monitoring system at some critical points of iodized oil capsule distribution, (ii) barriers and constraints in supply and distribution of iodized oil capsules, (iii) lack of local information for appropriate target groups and locations, and (iv) failure of the national government to provide sufficient follow-up, especially given the amount of government funds involved. These constraints in the supply and distribution system need to be resolved. Since Kimia Farma has a monopoly on the production of iodine capsules, it will be necessary to review the means of cooperation and communication between Kimia Farma and district authorities.

Component 5: Improving inter-ministerial coordination and institutional strengthening

The outputs of this component are satisfactory.

The Director General of Community Health was named Project Director and hence responsible for the overall implementation of the IIDC project. A Steering Committee for policy and program planning coordination chaired by Bappenas was established under MOH Decree No. 023/MENKES/SK/I/1997 to provide guidance and strategic policy recommendations. In addition, a Technical Team was assembled to provide advice on technical and operational issues of the IDD control program. Regular inter-sectoral meetings were coordinated by the Central Project Secretariat. The objective as stated in the SAR was to establish mechanisms to improve the coordination of project activities, and for the project committees to meet regularly and often. This objective was completed by the end of 1997.

Early in the project, coordination did not always work smoothly due to the fact that i) senior officials from ministries and Bappenas were usually very busy and unable to attend regular coordination meetings, ii) each agency had different views of the relative priorities of the program, and iii) information and reports did not flow smoothly across all agencies. However the CPS performed well in the day-to-day operational management and supervision and eventually overcame these difficulties through increased communication and the delegation of regular responsibilities to staff that reported regularly to the relevant senior officials.

With decentralization, organization and management was gradually transferred to provincial and district levels. The CPS took the lead role in coordinating the province and district through the Provincial Project Management Units (PPMUs) and the District Project Management Units (DPMUs). In April 2001, it was decided that PPMUs would be established in 6 provinces and DPMUs in the 24 districts that will receive special IDD block grants. Advocacy on the part of the CPMU to the local governments was a critical factor for success and through this advocacy many districts put IDD control in their strategic plans. Continued success in the future will depend in part on strengthening capacity of local personnel and advocacy to newly elected governors and district officials (Bupatis) to ensure local ownership and continued funding from local budgets.

The coordination of policies at the provincial and district level are given in tables in Annex 1.

Under the influence of the local IDD teams, local regulations concerning the control of iodized salt production and distribution had been issued in certain districts and provinces. Institutional strengthening for the IDD control program had been implemented through technical assistance contracts and fellowship programs to improve human resource development and program management. Fellowship programs for local staff development was accomplished through overseas and in-country training programs. 107 and 54 staff received S1 and S2 in-country degrees respectively. Additionally, 13 staff members received overseas masters degree. The project also offered in-country and overseas short courses.

4.3 Net Present Value/Economic rate of return:

The IIDC Project SAR, in an annex, estimated the expected project benefit to project cost ratio to be approximately 29:1. This figure was based on an assumed productivity impact of 5% on individuals successfully treated for IDD. The annex of this ICR recalculates this ratio with updated figures from the project, while maintaining the original assumptions in the SAR, and finds the benefit to cost ratio for salt fortification to be 30:1 while the ratio for capsule distribution to be 8:1. Please see Annex 3 for details.

4.4 Financial rate of return:

N/A

4.5 Institutional development impact:

The IIDC Project's impact on institutional development was substantial for many of the reasons discussed above: (a) the project facilitated cross-sectoral and cross-ministerial collaboration to address an important public health issue from both the demand and supply perspective while simultaneously assuring extensive monitoring efforts from a variety of institutional perspectives, (b) the project facilitated the government's transition to the new decentralized context by creating linkages across the district, province, and central level as well as developing important capacity at the district and province level in regards to the management and delivery of health and nutritional services as well as social enforcement efforts, (c) the project emphasized the development of a sustainable exit strategy that includes all relevant ministries and levels of government and resulted in a model strategy that may serve Indonesia's health policy needs in general under the new decentralized political environment (this will be discussed further below).

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

The influence of outside factors on implementation and outcomes has been profound. As stated above, soon after project initiation Indonesia experienced a massive financial crisis that adversely affected many dimensions of government performance.

5.2 Factors generally subject to government control:

In addition to influences resulting from the financial crisis, uncertainty over political reform following the crisis resulted in governmental delays that postponed the implementation of many project sub-components. By 1999, the government had adopted the decentralization program which radically changed the nature of health and nutrition service delivery. IIDC project efforts to accommodate this move towards decentralization was reflected in the third loan amendment which included a new scheme of IDD financing through a district block grant system.

The achievement of project goals would have been easier in a national environment that enforced existing anti-IDD legislation. There are many examples where the presence of an active legal enforcement

environment would have facilitated IDD control progress. For example, the NADFC sends warning letters to producers of non-iodized salt, but the letter has no legal status and so producer compliance with these letters is generally low. Indeed there is a presidential decree requiring all salt to be iodized, but there is no sanctioning power behind this decree. The presence of active legal regulation and enforcement, coupled with existing project efforts, would most likely have resulted in even greater increases in the supply of iodized salt. On the other hand, strong government ownership of the project greatly facilitated project progress on many fronts.

5.3 Factors generally subject to implementing agency control:

The implementing agency was very diligent, careful, and highly committed to the successful implementation of the project. Findings during the ICR mission indicated that the CPMU worked very effectively over the tumultuous and uncertain periods of crisis and decentralization across all of the components of the IIDC project with perhaps the exception of the iodine capsule component, where GOI could have been more forceful in implementing this aspect of the program. The CPMU developed close working relationships with all relevant ministries and directorates, as well as with all provincial and local governments involved in the district grant program, and these relationships surely facilitated the effective implementation of the project.

5.4 Costs and financing:

N/A

6. Sustainability

6.1 Rationale for sustainability rating:

The project sustainability is rated as likely. Public knowledge of the benefits of iodized salt have increased significantly under the IIDC Project, and this is likely to sustain demand for fortification into the future. In addition the close working relationships between PT Kimia Farma, the producer of KIO3, MOIT, and Salt Producer Associations are expected to be maintained (all relevant parties have signed an MOU) in order to ensure sufficient supply of KIO3 and hence improve the availability of iodized salt. MOIT will also continue to assist small salt farmers through improvements in the Demplot program, principally to continue to refine the innovative salt production processes so that the Demplot approach can be adapted by salt farms smaller than 3 hectares. MOIT will also continue to assist salt farmer cooperatives to acquire iodization technology.

National capacity in addressing IDD has also been increased. Under the auspices of the IIDC Project, an IDD Laboratory at the University of Diponegoro, Semarang, has been developed and is now one of eight IDD laboratories in an international network of IDD Centers of Excellence. Plans are underway for additional laboratories in both the eastern and western regions of Indonesia. The Center of Excellence Laboratory publishes a periodic scientific IDD journal (ISSN No. 1412-5951) and has also developed the IDD Management Information System through its website: http://www.gaky.net which also contains links with the Directorate of Nutrition (www.gizinet.com), Health Promotion (www.promkes.com), MOIT(www.infogaram.com) and NADFC (www.pom.go.i). Diponegoro was not the only university with which the project collaborated, indeed nutrition related capacity was improved at many universities.

This enhanced national capacity will be critical as IDD monitoring efforts continue. A follow up survey that detects hyperthyroidism through a reliable biochemical screening is planned for severely endemic areas. UIE measures will also be utilized more widely as IDD indicators to assist future planning for IDD control. The SUSENAS monitoring of household salt consumption will continue with direct support from the central government. Accurately assessed TGR, UIE, and the proportion of households consuming iodized salt will continue to serve as performance indicators by which the project can be monitored and

evaluated in the future.

Some monitoring efforts, however, are threatened by a projected lack of resources. NADFC has only a limited budget to continue salt monitoring at the market level after project ends – they estimate they will only be able to monitor at 10-20% of the level witnessed under the IIDC project. For monitoring and other efforts, NADFC and MOIT are exploring the establishment of a direct linkage to continue enforcement efforts and information sharing. These linkages in general are likely to be effective in a decentralized context, especially if the linkages are made at the province level MOIT and NADFC offices, since local governments are more likely to respond to joint teams.

IDD advocacy will continue to be conducted with local governments, however the Center for Health Promotion (CHP) has insufficient funds for a general media campaign (with an estimated cost of 1 billion Rps/year). Given the efficacy of the previous media campaigns, it may only be necessary to conduct large scale campaigns rather infrequently if the public health messages of such campaigns are sustained by the public. CHP is currently investigating the possibility of private sector collaboration with firms such as IndoFarma, the maker of iodine test kits, and KimiaFarma in order to continue public advocacy efforts. The sustainability of efforts such as these is not only an issue for this project but one facing many of Indonesia's health and nutrition programs post-decentralization.

After the project had closed, almost all of the IDD block grant districts have allocated local budget for IDD control activities at a level higher than before.

6.2 Transition arrangement to regular operations:

From the very inception, the IIDC project has been concerned with transition arrangements to regular operation. Various monitoring, enforcement, and promotional activities have been incorporated into the required operations of MOH, MOIT, and NADFC and are regularly conducted. In addition, the piloting of the IDD district block grants has led to key experiences and insights into the conduct of nutritional policy in a decentralized context. Indeed the GOI exit strategy, promoted by the IIDC project as an important factor in determining the sustainability of IDD efforts, was chiefly concerned with implementation of IDD control efforts at the district level.

The GOI exit strategy itself is an unique achievement that will influence IDD control post-project all over the country. The strategy was formulated by a inter-ministerial team after consultations with other government agencies, health and nutrition related NGOs, and academia. These consultations resulted in a document that will be disseminated to province and district governments as a reference for planning and management for IDD control. The resulting National Plan of Action on IDD Control is categorized by 8 general types of interventions. However the exact mix of policy options recommended to a particular district depends on three important district characteristics: (i) whether the district is classified as endemic or not, (ii) whether the district is a salt production area or not, and (iii) whether or not district residents consume adequate amount of iodized salt. The 8 types of interventions are recommended to be applied in different combinations for each type of region. The eight intervention types generally concern: a) strengthening commitment of local government, b) increasing raw salt production, c) increasing supply of iodized salt, d) social and law enforcement, e) monitoring the quality of salt, f) institutional strengthening, g) increasing coverage of iodine capsule distribution and h) monitoring and evaluation of IDD Control Program.

The major challenge facing IDD planning, priority setting, and implementation is the need to respond to marked differences between districts in the dimensions and features of the problem. For instance, districts vary as regards the importance of the salt industry, salt infrastructure and expertise, cultural practices

related to salt farming, and the extent and awareness of the IDD problem. This exit strategy is the first step GOI has taken towards formulating nutrition policy that accounts for such heterogeneity in district conditions. The exit strategy will hopefully serve as a useful example of how to formulate and guide health and nutritional policy in a decentralized context.

The draft exit strategy that summarizes relevant IDD control activities dependent on district characteristics is given in a Table in Annex 1.

7. Bank and Borrower Performance

Bank

7.1 Lending:

The Bank lending performance was satisfactory. As stated above, the project identification was consistent with the anti-poverty and health service delivery priorities in several Indonesian CASs, as well as with government priorities of improving population nutritional status. The project contained a well-coordinated package of policy components although not all important risks were anticipated at the identification stage, such as ensuring an adequate supply of KIO3. The project objectives were clear and realistic given international experience with IDD control, and contained explicit and quantifiable performance indicators. The project design adequately covered all important aspects of IDD control including an emphasis on comprehensive monitoring, and the Bank team was comprised of specialists in each area relevant to project design.

At the start of project implementation, Bank delays in providing approval for certain activities led to delayed implementation. However improvements in communication between the Bank, the GOI, and the implementing agencies especially on the second half period of the project served to alleviate these delays. Nevertheless some delays in disbursement persisted due to inconsistencies between bank guidelines for procurement and GOI regulations/presidential decrees. Perhaps most significantly, the 2003 Susenas salt module was delayed because of Bank difficulties relating to procurement. Similar difficulties also delayed the final evaluation.

The Salt Farmers Development Program (part of the third component) was delayed at the start due to non-specific designs prepared during project appraisal, as well as the fact that this was a new work area for MOIT.

7.2 Supervision:

Bank project supervision was satisfactory. The Bank conducted supervision missions twice in every year of project implementation. The Bank's review of project implementation was reported in each Aide Memoire, which was discussed by the Bank together with all implementing units at central level. Some of the findings and recommendations of these missions were critical for the overall success of the project. For example Bank staff played a key role in identifying the supply constraint of KIO3 and in coordinating meetings between government and the private sector in order to alleviate this constraint.

Bank missions found that the coverage and targeted distribution of the iodized capsules needed to be strengthened. Bank supervision also maintained a focus on the importance of social enforcement in the absence of a strong legal environment. In regards to procurement, between 5-10% of eligible contracts of goods were post-reviewed by Bank missions.

Bank supervision also played an important role in the development of the IIDC district block grants including the suggestion of advocacy and awareness raising about IDD issues among provincial and district officials and local parliament members. On district visits the Bank teams found strong commitment in

provinces to implement activities outlined in proposals for the district IDD grants. Indeed the Bank team reviewed all district block grant proposals in each year and offered concrete guidance on how to strengthen each one. Through advocacy from both the Bank teams and implementing units each of the project districts allocated local budgets and other resources for activities to control IDD. Also districts and provinces pursued legal reform to outlaw the production and sale of non-iodized salt.

7.3 Overall Bank performance:
For the reasons given above, the overall bank performance is deemed satisfactory.

Borrower
7.4 Preparation:
Borrower preparation was satisfactory. There was close cooperation between borrower and lender throughout the stage of project preparation. Leadership was provided by relevant counterparts at the National Development Planning Agency (Bappenas), MOH, MOIT, and BPS< largely due to the fact that these government counterparts believed in the health importance of the project. Representatives from all relevant ministries and directorates were involved in the preparation of the loan.

7.5 Government implementation performance:
The Government's implementation performance was satisfactory. Although there were delays at the start of the project as the process of inter-ministerial coordination was streamlined, the CPMU appointed to manage the project was highly capable in coordinating discussions across multiple and diverse agencies. Governmental performance was also driven by the fact that IDD control was seen as an important public nutrition initiative even before IIDC project identification occurred.

7.6 Implementing Agency:
The implementing agency was successful in overseeing a project that involved numerous ministries and agencies, as well as 36 local governments and 9 provincial governments, over a tumultuous period of financial crisis and profound government reorganization. Oversight of every project component was satisfactory save the iodized capsule component, where more active oversight may have contributed to better results.

In terms of procurement and project governance performance, equipment under a contract package exceeding USD 25,000 was required to proceed through national competitive bidding procedures while smaller packages were procured through the national shopping procedures. Consultant services and technical assistance were also selected and contracted in accordance with the WB guidelines and procedures on the use of consultants. 60-70% of goods purchased through the project were subject to prior review as well as large consultant contracts.

For the IIDC project at the provincial and local level, procurement processes was carried out by the project officer or sub-officer. Despite the lack of local government familiarity and understanding regarding the Bank guidelines for procurement (which led to some incomplete documentation and other minor errors) there were no large instances of mis-procurement that caused government loss. A Bank ex-post review examined 19 FY 2000 contracts and found 17 of them to be deficient as regards the procurement notice, bidding documents, and bidding security. However these errors were relatively minor and the implementing agency worked with local government to correct them.

A procurement workshop was conducted in Surabaya with 140 participants from 24 districts in 9 provinces. Electronic files of key documents were provided.

7.7 Overall Borrower performance:

For the reasons given above, the overall borrower performance is deemed satisfactory.

8. Lessons Learned

Many of the lessons learned from the IIDC Project were highlighted in discussions with GOI during the ICR mission or mentioned in the Project Completion and Evaluation Report conducted by the CPMU. The IIDC project provided valuable lessons and experiences to ministries and other government bodies involved, especially to the local governments as they learned how to manage projects in an integrated system such as this one. Lessons learned are organized into five distinct categories: (a) key aspects of project design (b) the implementation of policy in a decentralized setting, (c) the design of effective social enforcement, (d) innovations in the productive capacity of iodized salt, and (e) the determination of appropriate IDD indicators.

a) Key aspects of project design

There were several key aspects of the IIDC project that aided its successful implementation:

Importance of monitoring and evaluation

This project emphasized the use of monitoring and evaluation in the design of effective health policy. Indeed a relatively large amount of data concerning salt production, salt consumption, and health was collected under the extensive monitoring efforts. This allowed the CPMU to track project progress and target special efforts to lagging areas. Also, by linking with the annual SUSENAS surveys, the project innovatively utilized pre-existing monitoring systems to enhance the quality and scope of collected data. Overall, this aspect of project design linked data to policy thus benefiting the implementation of IDD control efforts.

Clear and focused project objectives

The project design included careful, and concurrent, assessments of both demand and supply issues as well as a clear understanding of the existing health and institutional environment. This resulted in clear, focused project objectives that guided project implementation.

Strong government ownership

From the very beginning this project benefited from strong government ownership. Indeed government interest in IDD control predated the project design period and the Bank, in facilitating the IIDC project, was responding to government interest and demand. The sense of government ownership resulted in an active CPMU that facilitated many aspects of project execution.

b) The implementation of policy in a decentralized setting

The IDD district block grant program provided important lessons for the provincial and district governments in designing and implementing IDD control programs. Special district IDD funds were provided to districts based on proposals which they developed themselves. Through the grant system the participating provincial and district governments gained considerable knowledge and experience in project proposal preparation, implementation, and monitoring and evaluation. In the future, the district authorities are expected to review their own proposals through the establishment of a Technical Review Team, perhaps operating province wide. The province government played an advisory and monitoring role in this process and this structure can serve as a model for the coordination of district health policies in general in the new decentralized system. The new decentralized project approach gave each program unit at the central,

provincial and district experience of their new role under decentralization. The effectiveness of the block grant approach is witnessed through the elevated health outcomes (in terms of TGR and UIE) of grant districts and the improved knowledge, attitude, and practice of salt farmers, other salt producers and distributors, and communities concerning salt production and the importance of iodized salt consumption.

c) The design of effective social enforcement

Social enforcement strategies were developed in this project as an alternative means to increase compliance with iodized salt regulations in the absence of an effective legal environment. Reports from provinces and districts revealed that the social enforcement activities had increased the community awareness and participation to support the IDD control program. There were many diverse approaches to social enforcement once the districts were allowed to pursue the enforcement means most suited to local conditions. For example, several districts involved the local chapters of the National Women's Organization (PKK) in assisting iodized salt distribution through the creation of alternative iodized-salt only markets in districts in four provinces (NTB, NTT, Central Java and South Sulawesi). Rembang district also established certified village salt vendors. Other districts, such as Agam district, encouraged the participation of local community and religious leaders in promoting iodized salt consumption as well as the participation of local market officials in monitoring and prohibiting non-iodized salt distribution in the markets. Successful social enforcement strategies were disseminated and implemented across provinces and IIDC grant districts through advocacy workshops with local government officials, parliamentarians, non government organizations, and civil society.

d) Innovations in the productive capacity of iodized salt

Demplots introduced a pilot technique to improve the quality and the quantity of raw salt produced by salt farmers. Successful salt production from Demplots have been exhibited in certain districts such as Jeneponto, Bima, Sumbawa and Rembang. These Demplots also increased the daily income of the salt farmers. The success of the Demplots is reflected in the observation that some districts are considering to replicate Demplots with their own local budget. However the replication to other locations still need attention and support from local government authorities in organizing the salt farmers group, land arrangements, and the necessary equipment.

This project identified the limited or absent supply of KIO3 as the major barrier to salt iodization in some areas. For example, one bank mission found a complete lack of KIO3 stock in regions in NTB for the last two years, and that this was the main factor behind an iodized salt consumption rate of 20%. A persistent risk factor for KIO3 supply is that KimiaFarma is the sole national supplier and is not held accountable if adequate supplies are not available. Only through the efforts of MOIT did KimiaFarma agree to provide buffer stocks in each of its pharmacy outlets and to consider smaller sized containted of 0.5 kg in addition to the 2kg available as a way to help small scale industry. In addition, IndoFarma will make iodine test kits available in each KimiaFarma pharmacy. After this agreement with KimiaFarma, the national rate of iodized salt consumption noticeably increased.

Through the focus on centers of salt production, the IIDC Project realized that the critical point of enforcement is during salt harvest season when very small producers emerge and dramatically increase the stocks of un-iodized salt in the country. Future IDD control efforts on the production side should focus on activities during harvest season.

e) Appropriate IDD indicators

The TGR of school children had been used as the specific indicator in the baseline as well as in the final IIDC project evaluation survey to assess the achievement of project goals. However, experiences from this project, as well as from studies elsewhere in the world, showed that the sensitivity and specificity values of the TGR palpation method are low due to cross-assessor variation. The IIDC Project no longer recommends TGR assessed through palpation as an indicator of the current iodine status of the community. The International Commission for Control of IDD (ICCIDD) now recommends the use of UIE as well as the proportion of households consuming iodized salt as indicators to assess progress towards elimination of IDD.

9. Partner Comments

(a) Borrower/implementing agency:

The goal of the IIDC Project was to lower the prevalence of iodine deficiency disorders (IDD) in Indonesia. This was approached through five project objectives or components namely: (i) monitoring the iodine status of the community, (ii) increasing consumption of iodized salt, (iii) increasing the supply of iodized salt, (iv) targeting distribution of capsules, and (v) strengthening inter-ministerial policy and program coordination for the control of Iodine Deficiency.

The project was a response to the government strategy that improved iodization of salt would allow the health sector to increase the proportion of the population treated with iodine and eliminate the use of expensive iodine capsules except in those areas where the prevalence of IDD is very high.

The objectives also responded to the government commitment to the resolution of World Summit for Children in 1990 to virtually eliminate IDD through Universal Salt Iodization by the year 2000.

In general, all implementing units found that the project objectives were clear and realistic and identified by measureable project performance indicators. A series of critical program priorities have been developed based on the goal and objectives of this project.

The project identification by the World Bank was consistent with the government's development strategy and the project preparation adequately covered design in all major aspects. However, there was insufficient assistance from the Bank in deciding the location and programmatic focus priorities which led to the very broad coverage and complex project operations management at the start of the project. But by the year 2000, the World Bank realized the need to restructure the project and recommended reduction in project coverage with priorities given to selected districts.

In the beginning of project implementation, the World Bank would often take a long time in providing No Objection Letters (NOL) which lead to delayed implementation of activities. The difficulties in the prior review process were eventually improved through better communication between the Bank, the GOI and implementing agencies especially on the second half period of the project. Sufficient attention and advice on project operations had been received as well from the Bank Staff.

There were 13 supervision mission during 7 years project implementation. For each mission, the Bank review on the implementation of the project was reported in the Aide Memoire which was discussed together with all implementing units at central level. In the Aide Memoire, the progress of each component and any implementation problems were adequately reported. The Aide memoires served to remind all implementing units of the issues which needed to be followed, up as well as the recommendation to overcome project problems. Due to the large coverage of provinces and districts, the limited time of the supervision mission, the political and security situation and the difficulty of transportation, there were some

high priority provinces and districts that have never been visited by the Bank mission such as East Nusa Tenggara and Maluku.

The World Bank Procurement procedures for small value contract (below 50 million rupiahs) by National Shopping were difficult and inconsistent with GOI's regulation.

Even though there were some constraints faced by the IIDC Project, in general, the overall project implementation and achievements were satisfactory. This project successfully implemented pilot decentralized planning and management through district block grants. This project has also successfully emphasized the use of monitoring and evaluation in the design of effective health policy, disseminated the social enforcement strategies to increased iodized salt consumption and introduced "demplot" as a pilot technique to improve the quality and the quantity of raw salt produced by salt farmers. There was increased awareness in the community as well as increased commitment of local government to support a sustainable IDD control program. Some lessons learned and best practices have been adopted and replicated by local government funding. The National capacity in addressing IDD has also been increased by this project, while the GOI exit strategy promoted by this project, which will be adopted as a National Action Plan to control IDD, is an important factor in determining the sustainability of this project.

(b) Cofinanciers:

(c) Other partners (NGOs/private sector):

10. Additional Information

Annex 1. Key Performance Indicators/Log Frame Matrix

Outcome / Impact Indicators:

Indicator/Matrix	Projected in last PSR[1]	Actual/Latest Estimate
Goal: Lower the prevalence of IDD Indicator: Goiter prevalence	50% reduction in TGR of highly endemic provinces* by end of the project.	TGR 2003**: NTT 28.4% (25.5% reduction) Maluku 31.6% (no reduction) Sultra 10.6% (57.4% reduction) Sumbar 9.8% (52.2% reduction)

*) based on IIDC Project baseline survey

**) Source: MOH, 2003. The IIDC Project Evaluation Survey

Output Indicators:

Indicator/Matrix	Projected in last PSR[1]	Actual/Latest Estimate
Objective 1: Monitoring the iodine status of the community Indicator: Classification of district/ subdistricts by IDD status using survey results	7 prov by June 97, additional 6 prov by Dec 97, final 13 prov by Dec 1998	All provinces simultaneously finished by Dec 1998
Objective 2: Increasing consumption of iodized salt Indicator: Proportion of households consumes salt with adequate level of iodine	80% in SUSENAS 1999	72.3% in 2003
Objective 3: Increasing the supply of iodized salt Indicator: Proportion of households consumes salt with adequate level of iodine	80% in SUSENAS 1999	72.3% in 2003
Objective 4: Targeting distribution of capsules Indicator: Proportion of capsules distributed correctly targeted	60% By December 1998	33% in 2003
Objective 5: Improved coordination of activities Indicator: Mechanism established, meeting regularly and effectively	By December 31, 1997	Achieved by December 31,1997

[1] End of project

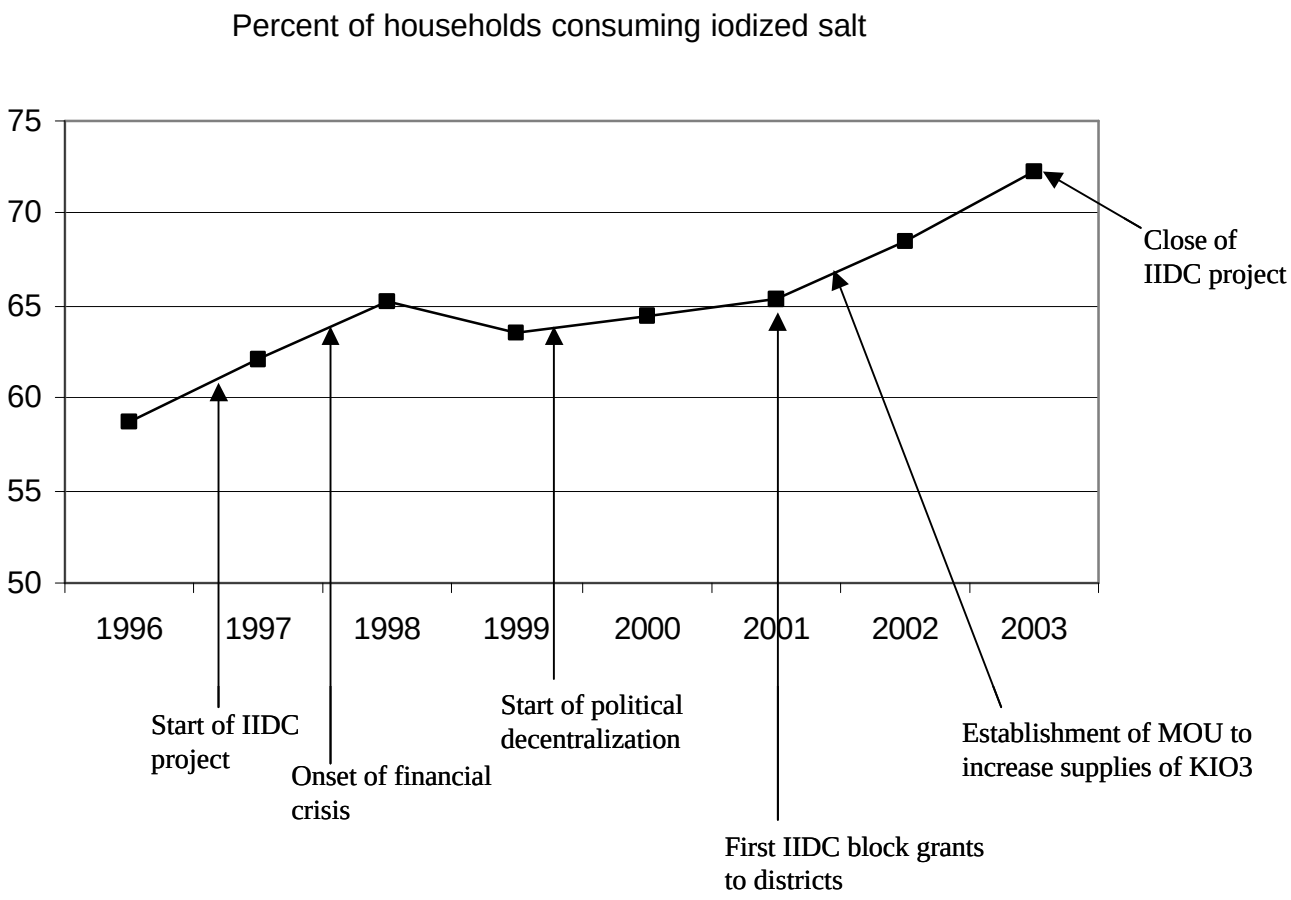
Changes in Total Goiter Rate (TGR) among School Children in Severe and Moderate Endemic Provinces in 1996/1998 and 2003

Province	**TGR**		
	96/98	**2003**	**Change**
East Nusa Tenggara	38.1	28.4	-25.4%
Maluku	33.1	31.6	-4.5%
North Maluku	33.1	44.9	+35.6%
	35.6	**35.0**	**-1.7%**
West Sumatra	20.5	9.8	-52.2%
South East Sulawesi	24.9	10.6	-58.6%
	22.7	**10.2**	**-55.1%**

Changes in Total Goiter Rate (TGR) among School Children in Severe Endemic Districts in 1996/1998 and 2003

Province	**District/City**	**TGR**		
		96/98	**2003**	**Change**
West Sumatra	1. Sawahlunto/Sijunjung	34.3	30.3	-11.9%
Bali	2. Karangasem	33.8	4.7	-86.1%
West Nusa Tenggara	3. Sumbawa	31.8	7.2	-77.3%
East Nusa Tenggara	4. Sumba Barat	74.8	45.7	-38.9%
	5. Timor Tengah Utara	87.0	20.0	-77.0%
	6. Belu	53.5	23.4	-56.2%
	7. Alor	32.4	24.7	-23.7%
	8. Sikka	32.4	37.1	+14.5%
	9. Ende	40.4	22.6	-44.0%
	10. Ngada	57.6	34.9	-39.4%
	11. Manggarai	41.5	51.5	-24.1%
South Sulawesi	12. Poliwali Manasa	34.5	23.7	-31.3%
South East Sulawesi	13. Buton	30.2	17.5	-42.0%
	14. Muna	32.8	12.5	-61.9%
		44.1	**25.4**	**-42.4%**

Progress in iodized salt consumption over duration of project



Original and Amended Amount of Loan, by Expenditure Category (in million $US)

No	Category of Expenditure	Original	Amended Loan		
			1998	1999	2001
1	Equipment	0.7	0.7	0.7	0.6
2	IEC & Instructional materials	2.6	2.6	1.8	1.7
3	Monitoring, Survey, Research	9.8	8.3	7.5	6.9
4a	Overseas Fellowship	1.7	1.7	1.0	1.0
4b	Local training, Fellowship &Work Shop	3.5	3.5	2.8	2.55
5	Project Administration	1.7	1.7	1.2	0.73
6a	Operating Cost 1997	1.1	1.1	1.1	1.1
6b	Operating Cost 1998-1999	0.6	0.6	0.6	0.6
6c	Operating Cost 2000 & thereafter	0.3	0.3	0.3	0.74
7	Services under part C 4 (SFDP)	3.7	3.3	2.5	1.3
8	Consultant Services	1.6	1.6	1.0	0.48
9	Unallocated	1.2	0.6	0.0	0.0
10	District Grants	0.0	0.0	0.0	2.1
	TOTAL	28.5	26.0	19.5	18.8

Policy Coordination at the Provincial Level

Province	Food and Nutrition Team	National Salt Committee	Lead Agency on IDD Control	Coordination Secretariat	Role of Coordination	RENSTRA/ PERDA	Monitoring and Evaluation	Allocated Local Budget (APBD)
West Sumatera	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
West Jawa	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Central Jawa	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
East Jawa	Yes	Yes	Food and Nutrition Team	Yes	Active	Yes	Integrated	Yes
West Nusa Tenggara	Yes	No	National Salt Committee	Yes	Active	Yes	Integrated	Yes
East Nusa Tenggara	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
South Sulwesi	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
South East Sulawesi	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Maluku	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes

Source: IIDC Project Evaluation, 2003

Policy Coordination at the District Level

District	Food and Nutrition Team	National Salt Committee	Lead Agency in IDD Control	Coordination Secretariat	Role of Coordination	RENSTRA/ PERDA	Monitoring and Evaluation	Funds from APBD
Sawahlunto Sijunjung	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Limapuluh Koto	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Cirebon	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Pati	Yes	Yes	POKJA	Yes	Active	Yes	Integrated	Yes
Sampang	Yes	Yes	Food and Nutrition Team	Yes	Active	Yes	Integrated	Yes
Pamekasan	Yes	No	Food and Nutrition Team	Yes	Active	Yes	Integrated	Yes
Sumbawa	Yes	No	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Ngada	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Takalar	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Jeneponto	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Pangkep	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Muna	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes
Central Maluku	Yes	Yes	BAPPEDA	Yes	Active	Yes	Integrated	Yes

Source: IIDC Project Evaluation, 2003

Draft Exit Strategy Policy Recommendations for Districts (May 2004 Version)

Non – Endemic / Mild Endemic District		Moderate / Severe Endemic District
Salt Production District		
- Adequate Consumption of Iodized Salt by District Residents	B, C, E, A, F, D, H Maintain production & consumption of iodized salt	G, B, C, E, A, F, D, H Ensure adequate distribution of iodine capsules and maintain production and consumption of iodized salt
- Inadequate Consumption of Iodized Salt by District Residents	C, B, D, A, F, E, F Intensify consumption and production of iodized salt along with social & legal enforcement efforts	G, C, B, D, A, F, E, H Intensify distribution of iodized capsules, intensify consumption and production of iodized salt along with social & legal enforcement efforts
Non – Production District		
- Adequate Consumption of Iodized Salt by District Residents	A, D, E, C, F, H Consolidate supply and consumption of iodized salt with social & law enforcement	G, A, D, E, C, F, H Ensure adequate distribution of iodized capsule, consolidate supply and consumption, intensify social & law enforcement efforts
- Inadequate Consumption of Iodized Salt by District Residents	C, D, A, F, E, H Accelerate supply & consumption of iodized salt along with the improvement of social & law enforcement	G, C, D, A, F, E, H Accelerate adequate distribution of iodized capsule, accelerate the supply and consumption of iodized salt along with the improvement of social & law enforcement

Notes:

A Increase public commitment for anti-IDD efforts
B Increase salt production and improve quality
C Ensure iodization through coordination and investment
D Conduct social and legal enforcement
E Conduct salt quality control
F Develop relevant institutions
G Distribute iodized capsule
H Conduct salt monitoring and evaluation

Annex 2. Project Costs and Financing

PROJECT COST BY COMPONENTS
(Total Base Cost in million USD)

No	Project Component	Appraisal Estimate	Actual Estimate	% of Appraisal
A	Iodine Status of the community			
	A1. IDD Survey & Mapping	5.1	3.7	73
	A2. Monitoring & Surveillance	0.7	0.4	57
	A3. Operations Research	0.5	0	0
	subtotal	**6.3**	**4.1**	**65**
B	Demand for Iodized Salt			
	B1. Improve Consumer Awareness	2.9	2.6	90
	B2. Improve compliance with Iodine capsules	0.4	0.3	75
	subtotal	**3.3**	**2.9**	**88**
C	Supply of Iodized Salt			
	C1. Monitoring iodine content	4.5	3.9	87
	C2. Salt Farmers Development	3.5	2.9	83
	C3. Enforcement	0.6	0.6	100
	C4. Rule Based & Operations Research	0.2	0.1	50
	subtotal	**8.8**	**7.5**	**85**
D	Capsules & capsule delivery			
	D1. Drugs	7.7	4	52
	D2. Operational cost	2.0	1.6	80
	subtotal	**9.7**	**5.6**	**58**
E	Institutional Strengthening & Social Mobilization			
	E1. Institutional Strengthening & Social Mobilization	1.8	1.5	83
	E2. Technical Assistance	1.8	1.7	94
	E3. Training & Fellowships	2.2	2.1	95
	subtotal	**5.8**	**5.3**	**91**
F	Program Management			
	F1. Project Management	2.7	2.5	93
	F2. Project Evaluation	0.6	0.5	83
	F3. Project Coordination	0.2	0.2	100
	subtotal	**3.5**	**3.2**	**91**
	Total Base Cost	**37.4**	**28.6**	**76**
	Contingencies	**7.9**		
	Total Project Cost WB+GOI	**45.3**		

Project Cost By Procurement Arrangement
US$ million (including contingencies)

Category of Expenditure	Procurement Method 1/ Appraisal Estimate				Procurement Method 1/ Actual/Latest Estimate			
	NCB	Others 2/	NBF 3/	Total	NCB	Others 2/	NBF 3/	Total
Equipment	0.6	0.3		0.9	0.6	0.3		0.9
	(0.6)	(0.2)		(0.8)	(0.4)	(0.2)		(0.6)
IEC&Instr. Materials	4.0			4.0	1.0	1.4		2.4
	(2.8)			(2.8)	(0.7)	(1.0)		(1.7)
Monitoring/Survey/Res		10.0		10.0		6.9		6.9
		(10)		(10)		(6.9)		(6.9)
Overseas Training		1.7		1.7		1.0		1.0
		(1.7)		(1.7)		(1.0)		(1.0)
Local Training/w'shops		5.0		5.0		3.7		3.7
		(3.7)		(3.7)		(2.6)		(2.6)
Project Administration		2.5		2.5		1.0		1.0
		(1.8)		(1.8)		(0.7)		(0.7)
Operational support		7.0		7.0		4.7		4.7
		(2.2)		(2.2)		(1.4)		(1.4)
Salt Farmers Dev.		3.7		3.7		1.3		1.3
		(3.7)		(3.7)		(1.3)		(1.3)
Technical Assistance		2		2		0.6		0.6
		(1.8)		(1.8)		(0.5)		(0.5)
Drugs			8.5	8.5			4.0	4.0
			(0)	(0)			(0)	(0)
District Grant				0		2.1		2.1
				(0)		(2.1)		(2.1)
Total Cost WB+GOI	**4.6**	**32.2**	**8.5**	**45.3**	**1.6**	**23**	**4.0**	**28.6**
Total Cost WB	**(3.4)**	**(25.1)**	**-**	**(28.5)**	**(1.1)**	**(17.7)**	**-**	**(18.8)**

Notes:
1/ Figures in parenthesis are the amount to be financed by the Bank Loan.All cost include contingencies
2/ Included National Shopping and Selection of Consultants
3/ NBF= Not Bank Financed, includes Central and Local Government Funds

PROJECT FINANCING BY COMPONENTS (In million USD equivalent)

No	Project Component	Appraisal Estimate		Actual Estimate		% of Appraisal	
		Bank	GOI	Bank	GOI	Bank	GOI
A	Iodine Status of the community						
	A1. IDD Survey & Mapping	5.0	0.1	3.6	0.1	72.0	100.0
	A2. Monitoring & Surveillance	0.7	0.0	0.4	0.0	57.1	0.0
	A3. Operations Research	0.5	0.0	0.0	0.0	0.0	0.0
	subtotal	***6.2***	***0.1***	**4.0**	**0.1**	**64.5**	**100.0**
B	Demand for Iodized Salt						
	B1. Improve Cons. Awareness	2.0	0.9	1.8	0.8	90.0	88.9
	B2. Improve compliance with	0.3	0.1	0.2	0.1	66.7	100.0
	iodine capsules						
	subtotal	***2.3***	***1.0***	***2.0***	***0.9***	**87.0**	**90.0**
C	Supply of Iodized Salt						
	C1. Monitoring iodine content	3.4	1.1	2.9	1.0	85.3	90.9
	C2. Salt Farmers Development	3.4	0.1	2.8	0.1	82.4	100.0
	C3. Enforcement	0.6	0.0	0.6	0.0	100.0	0.0
	C4. Rule Based & Op. Research	0.2	0.0	0.1	0.0	50.0	0.0
	subtotal	**7.6**	**1.2**	**6.4**	**1.1**	**84.2**	**91.7**
D	Capsules & capsule delivery						
	D1. Drugs	0.0	7.7	0.0	4.0	**0.0**	51.9
	D2. Operational cost	0.9	1.1	0.6	1.0	66.7	90.9
	subtotal	**0.9**	**8.8**	**0.6**	**5.0**	**66.7**	**56.8**
E	Institutional Strengthening &						
	Social Mobilization						
	E1. Institutional Strengthening &	1.0	0.8	0.7	0.8	70.0	100.0
	Social Mobilization						
	E2. Technical Assistance	1.4	0.4	1.3	0.4	92.9	100.0
	E3. Training & Fellowships	2.0	0.2	1.9	0.2	95.0	100.0
	subtotal	**4.4**	**1.4**	**3.9**	**1.4**	**88.6**	**100.0**
F	Program Management						
	F1. Project Management	1.4	1.3	1.3	1.2	92.9	92.3
	F2. Project Evaluation	0.4	0.2	0.4	0.1	100.0	50.0
	F3. Project Coordination	0.1	0.1	0.1	0.1	100.0	100.0
	subtotal	**1.9**	**1.6**	**1.8**	**1.4**	**94.7**	**87.5**
	Total Baseline Cost	**23.3**	**14.1**	**18.7**	**9.9**	**80.3**	**70.2**
	Contingencies	**5.20**	**2.71**				
	Total Project Cost	**28.5**	**16.8**				

PROJECT FINANCING BY PROVINCE

NO	LOCATION	ACTUAL/LATEST ESTIMATE (USD 000 000)												
		NUTRITION		PROMOTION		POM		MOHA		MOIT		TOTAL		
		BANK	GOI	BANK	GOI	BANK	GOI	BANK	GOI	BANK	GOI	BANK	GOI	TOTAL
	PROVINCE :													
1	West Java	0.41	0.42	0.04	0.02	0.00	-	0.05	0.01	-	-	0.50	0.46	0.96
2	Central Java	0.39	0.44	0.02	0.01	0.02	-	0.03	0.01	-	-	0.45	0.46	0.91
3	East Java	0.87	0.50	0.09	0.04	0.01	-	0.05	0.01	-	-	1.02	0.55	1.57
4	West Nusa Tenggara	0.50	0.39	0.01	0.01	-	-	0.03	0.00	-	-	0.54	0.40	0.94
5	East Nusa Tenggara	0.65	0.41	0.06	0.03	-	-	0.03	0.01	-	-	0.75	0.44	1.19
6	South Sulawesi	0.70	0.44	0.02	0.01	-	-	0.06	0.01	-	-	0.78	0.46	1.24
7	Southeast Sulawesi	0.37	0.40	0.06	0.03	0.01	-	0.03	0.01	-	-	0.46	0.43	0.89
8	West Sumatera	0.36	0.46	0.03	0.01	0.03	-	0.02	0.01	-	-	0.45	0.48	0.93
9	Maluku	0.25	0.39	0.05	0.02	-	-	0.02	0.00	-	-	0.31	0.41	0.73
10	D.I. Aceh	0.05	0.07	-	-	0.01	-	-	-	-	-	0.06	0.07	0.13
11	North Sumatera	0.08	0.13	-	-	0.02	-	0.03	0.01	-	-	0.13	0.14	0.26
12	Riau	0.05	0.07	-	-	0.01	-	-	-	-	-	0.06	0.07	0.13
13	Jambi	0.03	0.12	-	-	0.01	-	-	-	-	-	0.05	0.12	0.17
14	South Sumatera	0.05	0.07	0.03	0.01	0.01	-	-	-	-	-	0.09	0.08	0.18
15	Bengkulu	0.03	0.03	-	-	0.01	-	-	-	-	-	0.03	0.03	0.07
16	Lampung	0.04	0.04	0.03	0.01	0.01	-	-	-	-	-	0.09	0.06	0.14
17	DKI Jakarta	0.04	0.02	-	-	0.01	-	-	-	-	-	0.05	0.02	0.07
18	D.I. Yogyakarta	0.02	0.06	-	-	0.01	-	-	-	-	-	0.03	0.06	0.09
19	Bali	0.08	0.10	0.05	0.02	0.00	-	0.03	0.01	-	-	0.16	0.13	0.29
20	West Kalimantan	0.05	0.10	-	-	0.01	-	0.01	0.00	-	-	0.08	0.10	0.18
21	Central Kalimantan	0.05	0.10	-	-	0.01	-	0.03	0.01	-	-	0.09	0.11	0.20
22	South Kalimantan	0.08	0.10	-	-	0.01	-	0.01	0.00	-	-	0.11	0.10	0.21
23	East Kalimantan	0.04	0.10	-	-	0.01	-	-	-	-	-	0.05	0.10	0.14
24	North Sulawesi	0.11	0.11	-	-	0.01	-	-	-	-	-	0.12	0.11	0.23
25	Central Sulawesi	0.16	0.21	0.06	0.03	0.01	-	0.01	0.00	-	-	0.24	0.24	0.48
26	Irian Jayan	0.06	0.24	0.04	0.02	0.03	-	-	-	-	-	0.13	0.26	0.39
27	East Timor	-	-	0.00	0.00	0.00	-	-	-	-	-	0.01	0.00	0.01
28	CENTRAL	6.35	1.77	1.18	0.50	0.50	0.04	0.29	0.35	3.64	1.26	11.96	3.92	15.88
	Grand Total	**11.88**	**7.29**	**1.79**	**0.75**	**0.78**	**0.04**	**0.72**	**0.46**	**3.64**	**1.26**	**18.80**	**9.80**	**28.60**

Annex 3. Economic Costs and Benefits

Benefits related to IDD arise through many channels, including increased productivity, greater educational attainment, reduced morbidity and mortality, and lower health care costs. This analysis will focus on the benefits arising through productivity increases. Certain key parameter assumptions must be made in order to conduct an analysis of this sort and these assumptions are presented in the table below. Some of these parameter values have been informed by project experience.

Assumptions in Calculating Cost-effectiveness

Parameter	Value
Program effectiveness (percent)[a]	75
Unemployment (percent)[b]	10
Life expectancy (years)[b]	66
Discounted rate (percent)[b]	10
Annual wage rate (USD)[b]	720
Population (number)[b]	207,000,000
Iodine deficiency rate (percent)	11
Productivity loss (percent)[a]	
Iodine deficiency	5
Cretins	50
Capsule coverage of childbearing age women (percent)	33
Capsule coverage of pregnant women (percent)	33
Capsule coverage of lactating women (percent)	33
Capsule coverage of school children age (percent)	48
Coverage of iodized salt (percent)	73

Sources: a) The World Bank (1994)
BPS (1998-2003)

The analysis looks at five types of iodine interventions: the fortification of salt, and the distribution of iodized capsules to four distinct groups (women of childbearing age, pregnant women, lactating women, and school age children). The table below gives the benefit-cost ratio for each of the five interventions, along with some other key parameter values derived from the survey. Salt fortification is estimated to have a benefit/cost ratio of 30:1, very close to that estimated in World Bank (1994) and far higher than the estimates for the four iodized oil capsule interventions which all fall between 7:1 and 8:1.

Costs and Effectiveness of Iodine Interventions

Parameter	Iodized Oil				Iodized Salt
Target group	Childbearing age women	Pregnant women	Lactating women	School age children	Everyone
Number of target group	8,100,000	967,000	922,950	1,800,000	207,000,000
Beneficiaries	2,670,000	319,110	304,574	864,000	151,110,000
Average rate of iodine deficiency (percent)	11	11	11	11	11
Per capita cost (USD)	0.39	0.39	0.39	0.39	0.09
Per capita cost from World Bank (1994)[a]	0.50	0.50	0.50	0.50	0.10
Program effectiveness (percent)[a]	75	75	75	75	75
Deaths averted [a]	10	10	10	10	10
Productivity loss (percent)[a]					
- Deficient Population	5	5	5	5	5
- Cretins	50	50	50	50	50
Program duration	Year round	Year round	Year round	Year round	Year round
Program cost/year (USD)	1,041,300	124,453	118,784	336,960	13,599,900
Program benefit: discounted wage gains (USD)[b]	7,288,542	1,004,613	965,758	2,461,104	404,068,660
Benefit/cost ration (B/C)	7:1	8:1	8:1	7:1	30:1
B/C ratio from World Bank (1994)[a]	14:1	-	6:1	-	28

Source: a) World Bank (1994)
b) Calculation based on World Bank, 1994

Annex 4. Bank Inputs

(a) Missions:

Stage of Project Cycle	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.)		Performance Rating	
Month/Year	Count	Specialty	Implementation Progress	Development Objective
Identification/Preparation				
06/26/1995	*4*	SENIOR HEALTH SPECIALIST (1); LEAD ECONOMIST (1); CONSULTANT (2)	S	S
10/22/1995	*2*	SENIOR HEALTH SPECIALIST (1); LEAD ECONOMIST (1)	S	S
11/03/1996	*4*	SENIOR HEALTH SPECIALIST (1); CONSULTANT (3)	S	S
Appraisal/Negotiation				
06/19/1997	*2*	SENIOR HEALTH SPECIALIST (1); SENIOR OPERATIONS SPECIALIST (1)	S	S
Supervision				
05/09/1997	*2*	OPERATIONS SPECIALIST (1); MISSION LEADER (1)	S	S
11/27/1997	*1*	SR. HEALTH SPECIALIST (1)	S	S
04/17/1998	*2*	PRIN. HEALTH SPECIALIS (1); OPERATIONS OFFICER-HEA (1)	S	S
02/14/1999	*4*	PRINCIPAL HEALTH SPEC. (1); HD COORDINATOR,EACIF (1); OPERATONS OFFICER (1); CONSULTANT (1)	S	S
06/29/1999	*3*	HD COORDINATOR, EACIF (1); OPERATIONS OFFICER (1); CONSULTANT (1)	S	S
02/27/2000	*3*	SENIOR ECONOMIST (1); OPERATIONS OFFICER (1); CONSULTANT (1)	S	S
04/06/2001	*2*	SENIOR ECONOMIST (1); CONSULTANT (1)	S	S
10/29/2001	*4*	TASK TEAM LEADER (1); OPERATIONS OFFICER (1); FINANCIAL MANAGEMENT S (1); PROCUREMENT, CONSULTANT (1)	S	S
04/29/2002	*2*	OPERATIONS OFFICER (1); CONSULTANT (1)	S	S
10/28/2002	*3*	TASK TEAM LEADER (1); OPERATIONS OFFICER (1); PROCUREMENT SPECIALIST	S	S

			(1)		
	03/31/2003	*5*	OPERATIONS OFFICER/TTL (1); SECTOR COORDINATOR (1); NUTRITIONIST/CONSULTAN (1); PROCUREMENT SPECIALIST (1); FM SPECIALIST (1)	S	S
	09/22/2003	*5*	OPERATIONS OFFICER/TTL (1); SECTOR COORDINATOR (1); NUTRITIONIST/CONSULTAN (1); PROCUREMENT SPECIALIST (1); FM SPECIALIST (1)	S	S
ICR					
	03/01/2004	*2*	OPERATIONS OFFICER (1); ECONOMIST (1)	S	S

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US$ ('000)
Identification/Preparation	N/A	455.9
Appraisal/Negotiation	N/A	above includes appraisal/negotiation
Supervision	N/A	319.6
ICR	N/A	above includes ICR
Total	N/A	775.4

Annex 5. Ratings for Achievement of Objectives/Outputs of Components

(H=High, SU=Substantial, M=Modest, N=Negligible, NA=Not Applicable)

	Rating
☐ *Macro policies*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☐ *Sector Policies*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☐ *Physical*	○ *H* ○ *SU* ○ *M* ○ *N* ○ *NA*
☐ *Financial*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☐ *Institutional Development*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☐ *Environmental*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
Social	
☐ *Poverty Reduction*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☐ *Gender*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☐ *Other (Please specify)*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*
☐ *Private sector development*	○ *H* ○ *SU* ● *M* ○ *N* ○ *NA*
☐ *Public sector management*	○ *H* ● *SU* ○ *M* ○ *N* ○ *NA*
☐ *Other (Please specify)*	○ *H* ○ *SU* ○ *M* ○ *N* ● *NA*

Annex 6. Ratings of Bank and Borrower Performance

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HU=Highly Unsatisfactory)

6.1 Bank performance	*Rating*			
☐ *Lending*	○ *HS*	● *S*	○ *U*	○ *HU*
☐ *Supervision*	○ *HS*	● *S*	○ *U*	○ *HU*
☐ *Overall*	○ *HS*	● *S*	○ *U*	○ *HU*

6.2 Borrower performance	*Rating*			
☐ *Preparation*	○ *HS*	● *S*	○ *U*	○ *HU*
☐ *Government implementation performance*	○ *HS*	● *S*	○ *U*	○ *HU*
☐ *Implementation agency performance*	○ *HS*	● *S*	○ *U*	○ *HU*
☐ *Overall*	○ *HS*	● *S*	○ *U*	○ *HU*

Annex 7. List of Supporting Documents

Badan Pusat Statistik dan Departemen Kesehatan (2000, 2001, 2002, 2003). “Hasil Survei Konsumsi Garam Yodium Rumah Tangga”, Laporan Jakarta.

Directorate of Community Nutrition, Ministry of Health, GOI (2003). Situational Analysis of Nutrition Problems in Indonesia, mimeo.

DDC Consultant (2000). Mid-Term Review of IIDC Project.

Heywood, P. and I. Jus’at (1995). “Targeting, surveys, and quality of data in the Iodine Deficiency Disorders Control Program”, World Bank mimeo.

Government of Indonesia, Ministry of Health (2004). “Technical Assistance for Evaluation on Intensified Iodine Deficiency Control Project: Final Report”.

Government of Indonesia in collaboration with WHO (2000). National Plan of Action for Food and Nutrition 2001-2005.

Loan Agreement IBRD Loan 4125-IND (1996).

Mannar, Venkatesh (1996). “Salt iodization for the elimination of iodine deficiency”, The Micronutrient Initiative, The Netherlands.

Marks, Geoff (2003). Protein-Energy Malnutrition in Indonesia: Key Challenges and Options, mimeo.

MOIT, GOI (2003). “Exit Strategi Dalam Pengembangan Garam Rakyat”.

Nutrition Research and Development Center and Directorate of Community Nutrition, Ministry of Health (1998). “National Survey for Mapping of Iodine Deficiency Disorders”, Final Report.

World Bank (1994). “Enriching lives: overcoming vitamin and mineral malnutrition in developing countries”, Washington D.C.

World Bank (1996). “Intensified Iodine Deficiency Control Project”, Staff Appraisal Report.

World Bank (1997 – 2003). Complete Aide Memoires.

World Health Organization (2001). “Assessment of Iodine Deficiency Disorders and Monitoring their Elimination: A Guide for Programme Managers”, second edition, WHO.