



Grant Assistance Report

Project Number: 38104
February 2006

Proposed Grant Assistance Islamic Republic of Pakistan: Iron and Folic Acid Fortification in Small-Scale Milling to Improve the Lives of the Poor, Especially Women and Children (Financed by the Japan Fund for Poverty Reduction)

CURRENCY EQUIVALENTS

(as of 14 February 2006)

Currency Unit	–	Pakistan rupee/s (Pre/PRs)
PR1.00	=	\$0.0167
\$1.00	=	PRs59.85

ABBREVIATIONS

ADB	–	Asian Development Bank
EAR	–	estimated average requirements
Hb	–	hemoglobin
MOH	–	Ministry of Health
MOU	–	memorandum of understanding
MT	–	metric ton
NFA	–	National Fortification Alliance
NGO	–	nongovernment organization
PIU	–	project implementation unit
PMO	–	project management office
ppm	–	parts per million
RHP	–	Reproductive Health Project
RETA	–	regional technical assistance
TA	–	technical assistance
UNICEF	–	United Nations Children's Fund
WHO	–	World Health Organization

NOTES

- (i) The fiscal year of the Government of Pakistan ends on June 30.
- (ii) In this report, "\$" refers to US dollars.

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JAPAN FUND FOR POVERTY REDUCTION (JFPR) JFPR Grant Proposal

I. Basic Data	
Name of Proposed Activity	Iron and Folic Acid Fortification in Small-Scale Milling to Improve the Lives of the Poor, Especially Women and Children
Country	Pakistan
Grant Amount Requested	\$1,997,500
Project Duration	3 years
Regional Grant	<input type="radio"/> Yes / <input checked="" type="radio"/> No
Grant Type:	<input checked="" type="radio"/> Project / <input type="radio"/> Capacity building

II. Grant Development Objective(s) and Expected Key Performance Indicators

<p>Grant Development Objectives: (i) Reduce anemia and folic acid deficiency in two low-income, high-risk districts with a population of 150,000–175,000 by adding dietary iron and folic acid to small <i>chakkis</i>.¹ (ii) Build the capacity of <i>chakki</i> millers and related businesses to fortify atta flour.² (iii) Build the capacity of district and provincial governments to regulate, monitor, and support <i>chakki</i> flour fortification. (iv) Build the capacity of the local government, child and/or women welfare groups, and nongovernment organizations (NGOs) to create community support and consumer demand for fortified flour. (v) Define realistic objectives and strategies for the sustainable expansion of flour fortification at small-scale <i>chakkis</i>. This will protect up to 50–60% of the population, mainly the rural poor, who are served only by <i>chakkis</i>.</p>
<p>Expected Key Performance Indicators: (i) Collaborative systems for fortifying <i>chakki</i> flour in two low-income areas agreed on by district, provincial, and national public and private stakeholders. (ii) Up to 100 <i>chakkis</i> with the capacity to fortify flour operational in two districts. (iii) Collaborative government-NGO support systems established at districts and provinces, including flour inspection and testing, social marketing, public education, and nutrition monitoring. (iv) Fortification implemented for 2 years for 150,000–175,000 consumers. (v) <i>Chakkis</i> integrated into the national flour fortification program. Fortified flour consumption will deliver additional World Health Organization (WHO) requirements for iron and folic acid and will reduce deficiencies by at least 20% among the target population.</p>

III. Grant Categories of Expenditure, Amounts, and Percentage of Expenditures

Category	Amount of Grant Allocated in \$	Percentage of Expenditures
Equipment and supplies	429,838	21.52
Training, workshops, seminars, public campaigns	292,000	14.62
Consulting services	598,000	29.94
Project management	496,094	24.83
Contingencies	181,568	9.09
Total	1,997,500	100.00
Incremental cost		

¹ *Chakki* mills are small-scale stone mills serving communities.

² Atta flour is unrefined brown flour processed by cracking wheat then grinding it into flour.

**JAPAN FUND FOR POVERTY REDUCTION
JFPR Grant Proposal
Background Information**

A. Other Data

Date of Submission of Application	28 February 2005
Project Officer	Axel Weber, Social Protection Specialist
Project Officer's Division, E-mail, Phone	South Asia Social Sectors (SASS), aweber@adb.org , 632-5946
Other Staff Who Will Need Access to Edit/Review the Report	Jacques Jeugmans, Gender, Social Development and Civil Society Division (RSGS), jjeugmans@adb.org
Sector	Health, nutrition and social protection
Subsector(s)	
Theme	Inclusive social development, gender and development
Subtheme(s)	
Targeting Classification	
Name of Associated Asian Development Bank (ADB) Financed Operation(s)	Reproductive Health Project
Executing Agency	Nutrition Wing, Ministry of Health (MOH)
Grant Implementing Agency(ies)	Dr. Zahid Larik Deputy Director General Health (Nutrition)/National Program Manager, Nutrition Program, Nutrition Wing Ministry of Health, Government of Pakistan, 10-D West, 1st Floor Taimur Chambers Fazal-e-Haq Road, Blue Area Islamabad. Ph: 051 9214976; 9202445; 9202426

B. Details of the Proposed Grant**1. Description of the Components, Monitorable Deliverables/Outcomes, and Implementation Timetable**

Component A	
Component Name	Site Identification, Inception Process, and Office Start-up
Cost (\$)	\$96,300 (excluding contingencies)
Component Description	<p>The activities under this component are as follows:</p> <ol style="list-style-type: none"> 1. Conduct stakeholder meetings in up to five subdistricts (union councils) to select two project districts. The two subdistricts should have the most promising supportive factors, including (i) a critical mass of <i>chakki</i> millers willing to participate; (ii) business infrastructure with potential to develop sustainable fortificant blending, feeder supply, and miller technical support; (iii) supportive local district councils; and (iv) commitment of NGOs, in particular those aligned with the Reproductive Health Project (RHP).³ 2. Implement the inception process in the two project districts. A series of meetings will convene federal and provincial MOH representatives and community stakeholders, including <i>chakki</i> millers,

³ ADB. 2001. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Islamic Republic of Pakistan for the Reproductive Health Project*. Manila.

	<p>related business, local government, and NGOs to affirm commitments and agree on memorandum of understanding (MOUs) that will establish clear project roles and responsibilities, including the following:</p> <ul style="list-style-type: none"> (i) the <i>chakki</i> millers that will fortify production along with specified project support (no charge for fortificant, plant upgrades, technical assistance [TA], and community marketing support); (ii) the local business that will provide miller supply and support services along with specified project support (capital upgrades, TA, and initial contract for services); (iii) the conditions to be established under which <i>chakki</i> and related support businesses will sustain fortified atta production beyond the period of public support; (iv) the executing agency and project commitments on financial incentives, capacity building, TA, and community facilitation; (v) the process of government inspection and monitoring; (vi) the supporting programs to be developed by local government agencies and NGOs for public education and social marketing; and (vii) the responsibilities of all partners in collaborating with the project evaluation. <p>3. Discuss and develop the initial approaches on up-scaling and extension of flour fortification in Chakki mills. These will be finalized under component D, when the results of the pilot project are available.</p>
Monitorable Deliverables/Outputs	<ol style="list-style-type: none"> 1. Two subdistricts selected with preliminary commitments. 2. Inception workshops completed 3. MOUs finalized among all project stakeholders 4. Initial approaches of extension discussed
Implementation of Major Activities: Number of months for grant activities	<ol style="list-style-type: none"> 1. Site identification: Months 1–3 2. Inception process: Months 3–6 3. MOUs: Months 3–6 4. Approaches of extension: Month 6
Component B	
Component Name	Multisectoral District Capacity Building (infrastructure and know-how) and Participatory Program Development
Cost (\$)	\$451,600 (excluding contingencies)
Component Description	<p>1. Capacity Building and Mill Upgrades for <i>Chakkis</i></p> <p>The project team, along with a national fabricator that has developed low-cost feeders and a national food technology institute, will assess <i>chakki</i> miller technical needs and provide a range of capacity-building services to millers including</p> <ul style="list-style-type: none"> (i) matching the needs of the individual <i>chakki</i> with an appropriate feeder and/or mixer design; (ii) fabricating and installing feeders; (iii) training and providing TA to millers; (iv) testing feeder operation and conducting baking trials to determine final specifications and allow for optimization of premix and feeder settings; and (v) distributing manuals and operational guidelines, including procedures for fortificant storage, addition process, and maintenance. <p>These services focus on mitigating risks to the <i>chakki</i> miller and overcoming reservations on fortification, such as changes in the quality of the flour.</p>

2. Developing Local Supply and Technical Support

The prerequisites for sustainable fortification in the subdistricts include (i) local business infrastructure and technical capacity to support feeder maintenance, (ii) capacity to procure and blend the fortificant mix, and (iii) ability to provide other technical services. The closer these support services to the *chakki* miller, the more cost-effective and sustainable the operation, and the greater the community benefit in terms of jobs and business opportunities. Key services to be developed in each project area include the following:

- (i) **Mixing and/or blending operations.** For cost-effective procurement, a fortificant concentrate will be shipped to the project area and diluted with local flour at a projected rate of 1:20. As incentive to millers to enter this new market, the project will provide
- a supply of iron and folic acid fortificant concentrate,
 - a 22-month contract for delivery of diluted fortificant to project *chakkis*,
 - capital start-up allotment of up to \$10,000, and
 - TA and facilitation of relationships with both local millers and national suppliers of vitamin and/or mineral concentrate.

This service might be built into an existing animal feed operation or other local business with blending–mixing operations, including larger *chakki* operations.

- (ii) **Feeder maintenance and supply.** While feeders will be procured and installed by a national fabrication company, two district organizations will be supported with
- 22-month contracts for maintenance, budgeted at up to \$500 per *chakki* miller; and
 - training and TA by a feeder fabrication company and a food technology institution.

With the cooperation of the fabrication company, this may be an attractive opportunity for local machine shops, electrical contractors, *chakki* owners with multiple mills, or other related business.

3. Capacity Building for District Food Control

The project team working with a national food technology institute and MOH food control at the federal, provincial, and district levels will develop plans for quality assurance and inspection of fortified *chakki* flour. While inspection and qualitative spot tests can be done in the communities, quantitative analysis will be in the district or provincial laboratories. These plans will be developed with maximum community participation. The national food technology institute and international consultants will identify necessary upgrades to food laboratories, sampling, and analytical capacity, and will provide TA.

4. Develop Biological and Nutrition Surveillance Capacity

District and provincial health officials will identify local health centers as surveillance sites where sampling for nutrition indicators will be integrated into ongoing treatment and diagnostic protocols. The project

	<p>will collect 4,400 capillary samples for hemoglobin (Hb) for 24 months, and will support the collection of a random sample sufficient for a 30 x 30 cluster survey. A national medical health institution and laboratory will provide TA and biological and statistical analyses. Surveillance of the biological impact will be developed not as “proof” of the health benefits arising from fortification, but as a quality assurance mechanism, and to address the policy and advocacy needs of the proposed expansion to national scale.</p> <p>5. Develop Multisectoral Social Marketing and Mobilization Project staff, along with a communications and marketing firm, will work with local governments and NGOs to (i) develop a community-based public education and mobilization plan to raise public awareness and create consumer demand; and (ii) positively reinforce millers, government, and related support personnel. The marketing plan will be based on audience research, and will include group discussions, individual interviews, and public meetings with local NGOs and government agencies. This plan will include traditional media and marketing channels, and will extensively use community social mobilization. Communications and marketing firms will build the local government, NGO, and other stakeholder capacities to implement and monitor community activities.</p> <p>6. Develop, Discuss, and Pre-test Cost-Sharing Alternatives to Achieve Sustainability Introducing incremental costs into the system after the first 12 months is possible through the local supplier and/or mixers by any of the following: (i) shifting some level of the \$7.5/kilogram (kg) cost of delivered premix to the local mixer and/or supplier for the premix, (ii) reducing the \$1/kg fee paid by the project to the local mixer and/or supplier for mixing and delivery to millers, or (iii) shifting part of the \$500 per <i>chakki</i> maintenance contract to the individual miller (either as a contract or on a charge-as-required basis). Different options could be piloted in the two project areas. These incremental costs from the supplier to the <i>chakki</i> would then, in turn, be passed on to the consumer by the <i>chakki</i> miller, and each would have a slightly different approach to passing along the retail costs. If fortified flour were perceived a true added value by consumers (which would be brought about by the associated project marketing activities), the volume of sales at <i>chakkis</i> that fortify flour would increase and some could choose not to pass along the higher costs to preserve higher revenues from sales.</p> <p>7. Stakeholder Consensus and Fortification Launch After an estimated 8-month capacity-building process, public events will be held as “district launches” for fortified atta campaigns.</p>
<p>Monitorable Deliverables/Outputs</p>	<p>1. Contracts for support services in place, including a food technology institute, a health and medical institute, a laboratory, and/or a communications firm. These will continue through component C.</p> <p>Activity 1: Capacity Building and Mill Upgrades for Chakkis</p> <ul style="list-style-type: none"> (i) <i>Chakki</i> miller needs assessed (ii) 100 feeders ordered, delivered, and installed (iii) Feeder tests and baking trials completed (iv) Manuals and TA delivered

	<p>Activity 2: Developing Local Supply and Technical Support</p> <ul style="list-style-type: none"> (i) Reports from a food technology institution indicating blending homogenous and technical services operational prepared (ii) Reports from a feeder fabricator and a food technology institution indicating feeder maintenance services trained and operational prepared <p>Activity 3: Capacity Building for District Food Control</p> <ul style="list-style-type: none"> (i) Food control needs assessed (ii) Sampling and analysis plan approved by the stakeholders (iii) Laboratory equipment upgrades ordered and installed (iv) Reports from a food technology institute indicating personnel training in sampling and analysis completed and communications channels for delivery of samples to analytical lab in place <p>Activity 4: Develop Biological and Nutrition Surveillance Capacity</p> <ul style="list-style-type: none"> (i) Sentinel sites identified and personnel trained (ii) Hemocues and supplies for capillary sampling ordered and delivered (iii) Community sampling and analysis plan completed (iv) Channels from district health posts to national medical laboratory operational (v) A baseline of a 30 x 30 cluster survey prepared <p>Activity 5: Develop Social Marketing and Mobilization</p> <ul style="list-style-type: none"> (i) Initial audience research and stakeholder analysis completed (ii) Stakeholder consensus on marketing and mobilization plan developed. (iii) Communications materials tested and produced (iv) MOUs supporting NGOs for community mobilization prepared <p>Activity 6: Develop, Discuss and Pre-test Cost-Sharing Alternatives to Achieve Sustainability</p> <ul style="list-style-type: none"> (i) Cost-sharing alternatives developed (ii) Stakeholder consensus on alternatives obtained (iii) Cost-sharing alternatives tested in selected districts <p>Activity 7: Social Marketing Launch</p> <ul style="list-style-type: none"> (i) District campaign launch and multisector workshops convened and publicized
Implementation of Major Activities: Number of months for grant activities	<p>Activity 1 : Months 6–7 Activities 2–5 : Months 6–14 Activity 6 : Months 25–36 Activity 7 : Month 14</p>
Component C	
Component Name	22-month Implementation of Flour Fortification and Control
Cost (\$)	\$605,984 (excluding contingencies)
Component Description	<p>1. Fortification at 100 Chakkis Roughly 625 metric tons (MT) of fortified flour per project area and an estimated 27,500 MT of flour at 100 <i>chakkis</i> fortified over 22 months. Based on estimates of 12.5 MT/month flour milling at each mill, implementation involves the following: (i) receiving delivery and storing</p>

an average 37.5 kg of diluted premix every month, (ii) fortifying daily production at a rate of 3 kg/MT, and (iii) record keeping of fortificant storage and use as agreed in MOUs. TA and quality assurance will be continuously provided via a fortificant supplier, a feeder maintenance contractor, local government food inspectors, and a food technology institute.

2. District Fortificant Support Operations

Local blending operations will receive delivery of fortificant concentrate and begin blending diluted fortificant premix. The monthly requirement for each project district with 50 participating *chakkis* is estimated at 1,875 kg, or 41,250 kg for 22 months. Local feeder maintenance and support operations will be undertaken as needed but will also include proactive site visits to ensure proper feeder operation. These operations will communicate monthly with local government flour inspectors.

3. Government Inspection and Food Analysis

While the inspection plan is not finalized, up to four inspections per month per mill are budgeted. Inspection will include on-site qualitative iron spot tests for instant feedback; monthly sampling for quantitative testing at provincial labs via spectrophotometry and high-performance liquid chromatography; and inspection of fortificant inventory, storage process, and feeder operation (based on operational guideline manual). Each *chakki* miller will receive results every month, and plan for remedial action if needed. Data from this government quality assurance will be integrated into the ongoing miller support system via the district project implementation unit (PIU).

4. Biological and Nutrition Surveillance

Local health workers begin collecting samples to determine changes in iron and folic acid status, including (i) Hb taken as a finger prick on site, and (ii) samples for serum folate and ferritin taken as part of ongoing treat protocols (when venous blood is indicated) and sent to a contracted laboratory for analysis. In conjunction with the ongoing surveillance, a national medical institution will conduct random samples for baseline in months 14–15 and follow-up survey in months 30–32.

5. Social Marketing and Mobilization

Building on the “district launch” (component B), local NGOs, together with local government and businesses, will promote flour fortification and hold other events. Social marketing will use provincial and district media channels but also help local NGOs and associations mobilize communities and conduct face-to-face education. Target audiences include *chakki* millers, health and regulatory officials, and general public institutions and consumers. Activities are expected to be more intense over the first 6–12 months of implementation. Synergies will be sought (concerning lessons learned, providers and procedures) with national large roller mill flour fortification, which “rolls-out” in 2005–2008. Besides promotion and education, key activities will be consumer research and analysis to better understand changes in preferences and priorities during the project. The contracted national marketing firm will compile sales data, conduct consumer surveys, and use economic analysis to define how much of the fortification cost the consumer is able and willing to pay.

Monitorable Deliverables and Outputs	<p>An extensive and in-depth evaluation is critical in replicating and expanding <i>chakki</i> fortification. Thus, documentation should be on a provincial or national scale. Monthly deliverables to be compiled by each PIU over 22 months are the following:</p> <ol style="list-style-type: none"> 1. Delivery of 1,500–2,000 kg of diluted fortificant premix <ol style="list-style-type: none"> (i) Records of fortificant concentrate delivery (ii) Records of flour (filler) purchase (iii) Records of delivery to <i>chakkis</i> (iv) Monthly tests on premix quality by national food technology firm 2. Feeder operation at 50 <i>chakkis</i> <ol style="list-style-type: none"> (i) Records of the maintenance company on operations and remedial actions (ii) Records from local government inspectors (iii) Occasional PIU site visits 3. Production of an estimated 625 MT of fortified flour <ol style="list-style-type: none"> (i) Inspection of fortificant inventory, storage, and feeder operation (ii) Records of 400 on-site qualitative spot tests for iron (iii) Records of 100 laboratory analysis of flour samples for iron and folic acid (iv) Record of inventory and delivery of fortificant concentrate to local blender (v) Reports of visits to each <i>chakki</i> by the feeder maintenance company (vi) Records of fortificant delivery by the blending company (vii) Reports from government inspectors 4. Population Nutrition Status Monitoring <ol style="list-style-type: none"> (i) Records of 100 finger prick tests for Hb (ii) Records on 25 serum samples sent to provincial or national laboratories (iii) Baseline and follow-up 30 x 30 cluster survey in months 14 and 32 5. Social Marketing and Mobilization <ol style="list-style-type: none"> (i) Media communications, as per district plan (ii) Reports from implementing NGOs on social mobilization (iii) Continuous monitoring of community activities and periodic surveys by the communications firm to understand consumer attitudes and demand and ability to pay added costs, and to define consumer financing strategies
Implementation of Major Activities: Number of months for grant activities	<p>Activity 1: Months 14–36 Activity 2: Months 14–36 Activity 3: Months 14–36 Activity 4: Months 14–36 Activity 5: Months 14–36</p>
Component D	
Component Name	Evaluation, Policy Development, and Recommendations for Expansion
Cost (\$)	\$323,776 (excluding contingencies)
Component Description	<p>1. Independent Evaluation and Analysis Throughout the project, an independent organization (the Pakistan Institute of Development Economics), which has extensive experience in economic and financial analysis and business and community development, will work with project offices and national technical institutions to document and monitor data, and participate in five semiannual project reviews. This will form the basis of an overall project</p>

	<p>evaluation and poverty impact assessment.</p> <p>A key indicator will be the extent to which conditions for sustained production and activity beyond the project period, as defined in the original MOUs, have been met. Based on these indicators developed with community stakeholders during inception, lessons learned will be compiled to enable recommendations for sustaining fortification in the two project districts, and for national policy and program expansion.</p> <p>These recommendations may include the following:</p> <ul style="list-style-type: none"> (i) inputs needed for local governments to achieve sufficient capacity to monitor quality assurance; (ii) optimal channels and techniques to raise community awareness, demand, and support; (iii) cost-effective (and minimum threshold) incentives for <i>chakki</i> and milling support services; (iv) data on how much and how quickly the financial burden can be passed on to the consumer, and the role of national legislation and regulation; and (v) the role of provincial and federal government agencies in setting regulations and providing assistance resources, particularly start-up support. <p>Based on these recommendations, the document will include (i) options for public policy, and (ii) projections for public expenditures needed to expand and establish <i>chakki</i> fortification on a significant scale. These will include plans for transition to consumer financing. These recommendations will be used in the two project communities to refine commitments for sustaining or expanding <i>chakki</i> fortification after project financial support is withdrawn. While public assistance may be needed during expansion, the project evaluation will define conditions and develop options to achieve sustainability.</p> <p>2. Policy Formulation and Advocacy for Expansion</p> <p>Based on the evaluation report, the project will conclude with national and local activities to consider the project recommendations.</p> <ul style="list-style-type: none"> (i) The MOH Nutrition Wing will conduct a stakeholder analysis and recommend policies for national expansion and integration of <i>chakkis</i> into the national flour fortification plan. With other stakeholders, MOH will host a national advocacy meeting to propose and confirm the next steps in fortifying flour nationwide. (ii) Public meetings will be held in the two project communities to facilitate local decisions sustaining fortification after the project. The two project communities are expected to continue to play a role in the national expansion strategies. (iii) A phased approach to extending the project achievements to the whole of Pakistan will be developed and discussed, including possible financing options.
<p>Monitorable Deliverables and Outputs</p>	<ol style="list-style-type: none"> 1. Evaluation report (including poverty impact assessment) 2. Report with recommendations and policy options 3. MOH position paper 4. National advocacy workshop 5. Two district workshops

Implementation of Major Activities: Number of months for grant activities	<ol style="list-style-type: none"> 1. Periodic assessments in months 10–36, with a report in month 33 2. Report by month 32 3. Review and position paper in months 33–36 4. Months 35–36
Component E	
Component Name	Project Management, Auditing, and Monitoring
Cost (\$)	<p>\$338,272* (excluding contingencies)</p> <p>* Costs for ongoing supervision and coordination are apportioned for each component. The cost above reflects supervision and administration expenses of the implementing agency, auditing costs, and costs of international program and technical consultants.</p>
Component Description	<p>As the Executing Agency, the MOH Nutrition Wing will establish an independent project management office (PMO). After the final site is identified, PIUs will be established in each project district, in close collaboration with RHP-related NGOs or district health offices.</p> <p>The PMO will</p> <ol style="list-style-type: none"> (i) be headed by a Government-appointed project director, who will manage the office and ensure effective project implementation; (ii) collaborate with MOH in all fiduciary matters and communications with ADB; (iii) supervise and finalize site selection and establish the two PIUs; (iv) act as the primary communication channel to federal and provincial government agencies; (v) contract with supporting technical institutions and facilitate interaction with the PIUs and project communities; (vi) contract with major private sector suppliers to project districts and facilitate interaction with the PIUs and project communities; (vii) channel funds to the PIUs, which will each maintain a separate sub-accounts for expenses and subcontracts at the district level; (viii) review and compile monthly progress reports received from the PIUs and other national implementing agencies; (ix) submit a comprehensive 6-month progress reports to the MOH Nutrition Wing and ADB; (x) facilitate work of the MOH Nutritional Wing; and (xi) prepare final project reports. <p>The PIUs will</p> <ol style="list-style-type: none"> (i) be responsible for day-to-day project administration and project implementation; (ii) coordinate, facilitate, and monitor activities of district and subdistrict local government and personnel, RHP-affiliated NGOs and other community organizations, <i>chakki</i> millers, and local suppliers; (iii) coordinate, facilitate, and monitor activities of national technical support agencies at the district level; (iv) compile monthly documentation from stakeholders and provide the PMO with monthly progress reports; (v) participate in semiannual project reviews; and (vi) provide assistance to evaluation activities as appropriate.
Monitorable Deliverables and Outputs	<ol style="list-style-type: none"> 1. PMO opened and staff hired 2. Site selection process organized 3. PIUs opened and staff hired 4. Monthly reporting of the PIUs to the PMO

	5. Quarterly reporting of the PMO to the MOH Nutrition Wing and ADB 6. Annual audited financial reports 7. Project completion report 8. Poverty reduction impact report
Implementation of Major Activities: Number of months for grant activities	Activity 1: Months 1–36 Activity 2: Months 3–36

2. Financing Plan for Proposed Grant to be Supported by JFPR

Funding Source	Amount (\$)
JFPR	1,997,500
Government	117,200
Other Sources (Please identify)	
Total	2,114,700

3. Genesis

WHO states that deficiencies in iron and folic acid are a severe problem in Pakistan, with devastating impacts on health and survival, and high costs to national economic development. About 40% of women, 65% of children, and a substantial number of men suffer from anemia. An ADB country study under RETA 5944,⁴ conducted by the Pakistan Institute of Development Economics in conjunction with MOH, estimated that in over 10 years, (i) the more than 22,000 maternal deaths and more than \$4.6 billion in lost productivity were caused by iron deficiency anemia, and (ii) the estimated 40,000 deaths from heart disease and birth defects were caused by folic acid deficiency.

Global experience of 75 years indicates that within 1 year, flour fortification can reduce vitamin and mineral deficiencies. The high flour consumption by all strata of Pakistani society suggests that the average consumption at the proposed levels of fortification can deliver about one third of WHO's estimated average requirements (EAR) for iron and 100% of EAR for folic acid. The RETA 5944 country study estimates that iron deficiency anemia prevalence may drop by 20% among consumers of iron fortified atta flour, significantly reducing maternal mortality and enabling productivity gains of more than \$800 million over 10 years. Flour fortified with folic acid was expected to bring down the number of children born with birth defects (neural tube defects) by one third, and rates of coronary heart disease by up to 9%. However, these benefits are limited by the inadequate reach of fortified flour from large-scale roller mills. More than half the population, particularly the poor, get atta mainly from small-scale *chakkis*.

Chakki flour fortification remains the best hope for relief from iron and folic acid deficiency for more than half the population. If fortification can be extended to a significant number of *chakkis*, protection for the rural poor and highly at-risk populations will rise sharply, and the projected reductions in iron and other deficiencies can be more than doubled.

The Government of Pakistan is committed to achieving nationwide flour fortification to reduce iron and folic acid deficiencies. MOH has endorsed the concept of mandatory legislation

⁴ ADB. 2000. *Technical Assistance for Regional Initiative to Eliminate Micronutrient Malnutrition in Asia Through Public-Private Partnership*. Manila.

of flour with iron 30.0 parts per million (ppm) and folic acid (1.5 ppm).⁵ The multisectoral team participating in RETA 5944 proposed a 10-year country investment plan to fortify flour nationwide in two phases. The two-phased approach segments production between large roller mills and small-scale *chakkis*. In phase 1 (2004–2008), more than 700 roller flour mills will start fortification. In phase 2 (2009–2013), the program will expand to small-scale *chakkis*.

In 2003, the National Fortification Alliance (NFA), chaired by the minister of health and represented by public and private sector stakeholders, adopted this two-phased plan. In early 2004, the Global Alliance for Improved Nutrition (GAIN) awarded the Government \$3 million for phase 1. Extending the benefits of fortification to the remaining 55–60% of the population not served by large-scale roller mills is a high priority.

Small-scale *chakkis* and/or villages, however, have little experience in fortification. The Nutrition Section of the Planning and Development Division, with support from WHO Eastern Mediterranean Regional Office and the Micronutrient Initiative⁶, has developed basic technologies, facilitated the design and fabrication of low-cost *chakki* -microfeeders in domestic companies, and conducted tests at several pilot *chakkis*. These technical trials have demonstrated that *chakkis* can add fortificant mix to flour to produce a safe, homogenous, and acceptable product. However, market-scale implementation is untested and commercial sustainability needs to be addressed.

NFA understands that to launch and sustain fortification at small-scale *chakkis* by 2008, (i) significant additional market experience is needed to develop the capacity of *chakki* millers in small business; (ii) local systems for supply must be developed; and (iii) the capacities to regulate, control quality, and do social marketing must be built. These are the objectives of the proposed project. The project will build on this foundation of technical development and pilots to implement the *chakki* flour fortification on a market scale, distributing the flour to more than 150,000 people in two districts. Experience from these activities will provide the national flour fortification program with an evidence-based foundation for fortifying *chakki* flour and for expanding significantly.

4. Innovation

In Pakistan, 50–55% of the population, mostly with low incomes, consume atta flour from *chakkis* in their neighborhoods or villages.⁷ However, they have little concrete market experience with small-scale fortification. Small-scale fortification differs from roller mill fortification (where the process has proven effective and sustainable) in product quality, production process, and distribution and marketing. While the need for innovation to penetrate poor and at-risk populations served by small-scale *chakki* millers has been identified by numerous development agencies, only small-scale technical pilot projects have been undertaken. The key technical, regulatory, business, and marketing elements at the small community scale have not been addressed. The proposed project is the first market-scale project to address these issues critical to the feasibility of small-scale fortification. Innovations include the following:

⁵ The Government accepts the concept of mandatory fortification (and the commitments made when it accepted \$3 million from Global Alliance for Improved Nutrition (GAIN) for fortification at large roller millers). This will be phased in over the next 5 years. While the legislation does not exist, a proposal has been tabled to modify food standards.

⁶ The Micronutrient Initiative (MI) is a not-for-profit organization specializing in addressing micronutrient malnutrition.

⁷ Bangladesh and India, where this project would also be applied, have a much greater proportion of *chakki* millers than Pakistan—70-80%.

4.1. New Business Environment

Fortification by *chakkis* requires adopting new technologies and business procedures and, to some extent, adopting a new role with consumers and new relationships with government and other businesses. Small-scale traditional enterprises such as *chakkis* do not usually invest in these improvements and innovations. By reducing risk and creating conditions to support improvements and changes in the milling environment, the project will motivate the *chakkis* to innovate.

4.2. New Technical Milling Approaches

While some technical pilot trials have been undertaken, the project will be the first market-level trial under field conditions to troubleshoot and optimize the accuracy of addition of fortificants and the robustness of *chakki* feeder technical designs, and to test options for cost-effective procurement, storage, inventory, and other critical factors. The project is expected to identify a number of innovations in technology and milling systems to enable fortification in the communities.

4.3. New Local Business Services

In the low-technology milling environment, adding the fortificant requires a diluted fortificant mix, blended with local flour at a projected rate of 1:20. This means that a typical market area of 500–700 *chakkis* needs 330–350 MT/year. Given this volume and the need for frequent delivery, key challenges would be transport and its costs in rural areas. Delivery of the fortificant concentrate to the districts and subdistricts is estimated at \$2/kg, and a pre-diluted fortificant would presumably cost about 20 times that. A key innovation would be lowering the costs of (i) blending fortificants in the districts; (ii) support services, including timely maintenance services; and (iii) spare parts supply for feeders.

4.4. New Links among District, Provincial, and National Agencies and Research Institutions

At a time of increased decentralization of many government functions, including health and food control services, local implementation will be the key to monitoring by the Government. Controlling food safety and quality in the *chakki* market requires sampling, analysis, and communications capacity at the community level. The project will link the union council, district inspectors, and health personnel to provincial and national agencies and national technical institutions to develop collaborative systems for food control and nutrition surveillance. Local agencies can sample and undertake qualitative testing (i.e., spot tests for iron) and coordinate with provincial or national counterparts for capacity building, technical guidelines, and more sophisticated food and statistical analysis.

4.5. Community Mobilization to Raise Consumer Awareness and Demand

Rural and low-income communities have few traditional channels for marketing new products. Literacy is low and traditional media outlets are scarce, limiting opportunities to educate consumers and create a perception of added value for fortified atta flour. Therefore, a key project objective is to develop new processes for social marketing and community mobilization to reach consumers of *chakki* flour via nontraditional community based and face-to-face channels as well as traditional media. A key advantage of small-scale fortification is that it

promotes not only a product that is healthier but also locally produced. Local ownership is key to motivating sectors of the community that might otherwise not be involved.

In this operational research phase, the project will address a number of questions about *chakki* fortification, such as (i) actual costs, (ii) how these costs can be brought down, (iii) how much of the increased costs—if not all—can the consumer be convinced of paying an additional price, and (iv) what the most effective areas or minimum thresholds for public subsidy are. The project will clarify these issues so that realistic, innovative strategies for sustainable *chakki* flour fortification can be developed.

5. Sustainability

While protecting 150,000–175,000 people for 2 years is a worthwhile activity in itself, it is not the project's ultimate aim. The goal is to define the conditions, capacities, and resources needed for the sustainable expansion of *chakki* fortification to as many as 100 million Pakistanis—mainly the poor and vulnerable. To sustain traditional, large-scale fortification, consumers are required to pay for all, or at least a significant part, of the fortification costs. However, fortification will be more expensive for the *chakkis* than for large-scale enterprises because the relative costs for plant and product improvements are higher (in large mills the cost increase is below 1%, in *chakkis*, 3–5%). The costs include the following:

- (i) Start-up investment is high relative to the size of the business. The typical start-up for a large roller mill producing 200 MT/day is about \$10,000–\$12,000. A *chakki* typically producing about 0.5MT/day requires about \$1,500. A small miller cannot bear the start-up cost of a new and risky venture.
- (ii) Supplying small volumes of fortificant to dispersed *chakkis* is more expensive than supplying mills in large towns. About one third of the projected cost of fortificant concentrate (for blending with local flour) is for distribution from urban centers to small markets served by *chakkis*.
- (iii) The fortificant mix used by *chakkis* is more expensive because it must be diluted to 5% in a flour blend. To avoid difficulties and the cost of distributing larger volumes of diluted fortificant from urban centers, blending fortificant concentrate with local flour should be done in the districts or subdistricts. Even if local enterprises mix, blend, and deliver the fortificant to the *chakki*, about \$3/MT may be added to the cost to atta flour.
- (iv) The costs of public communications, regulation, control, and quality assurance for decentralized *chakkis* and their customers are higher than for larger centralized production and markets with established media channels.

With no public intervention, the cost of fortification to the consumer will naturally reflect these added expenses. While the incremental cost to consumers from large roller mills may be about \$0.09–\$0.11 per person per year, the added cost for a consumer may be up to 5–7 times higher, or more than \$0.50 per person per year. Although this is affordable given the fluctuating price of bread, it hinders consumer adoption and financing. To overcome this barrier, public financing may be justified, given the high benefits and effective targeting of *chakki* flour fortification. However, the level of public resources, the specific channels of assistance, and the transition to sustainable consumer financing need to be carefully defined.

The project's central thesis is that building local public and private sector capacities will not only make small-scale fortification technically possible, but also lower incremental costs and increase local ownership to create consumer demand and sustainable production. The project will test and evaluate strategies to make investments in fortification more attractive to the *chakki*

miller, and fortified atta more affordable and attractive to the consumer. To reduce the risks to local *chakkis* and businesses, a number of public investments and support activities are planned to enable startup, including a temporary “introductory period” when the consumer will not be required to pay incremental costs. Project investments include the following:

- (i) *Chakki* millers will be offered free feeders, maintenance, training, and fortificant for 22 months. This financial incentive will lessen the perception of risk and resistance among *chakki* millers. The subsidy period will prove to *chakki* millers that consumers will accept and eventually be willing to pay for fortification. It will also allow the community to mount supportive actions (e.g. discussion groups and presentations), and the millers to understand and commit to the concept of fortification.
- (ii) Fortificant blending operations will be offered a lump sum for startup purchase of batch mixer and quality-control equipment, a free initial supply of fortificant concentrate, a 22-month contract to supply fortificant to 50 project *chakkis*, training, and facilitation of contacts with suppliers. These subsidies will encourage local entrepreneurs to enter this new and risky market, which will be limited to 50 *chakkis* during the project. The project period will allow careful evaluation of costs, potential efficiencies, and strategies for sustainability. Sustainability will be enhanced by synergy with existing businesses, for example, animal feed companies or spice processors may already have batch-mixing operations.
- (iii) Feeder maintenance and technical support suppliers will be offered training and contracts of \$500 per *chakki* for TA, spare parts supply, and maintenance services for 2 years. The subsidy period will allow for an analysis of the true costs of feeder maintenance at the *chakki* level as well as an opportunity to define strategies to lower the cost of feeder operation. Barriers to entry may be lower for local business such as machine shops, other business serving *chakki* stone mills, or local *chakki* millers with multiple mills throughout the district.
- (iv) Lowering costs, keeping profits and revenues within the community by developing local businesses, and transparent monitoring by the Government are key. The project will invest in public sector activities and capacity building for monitoring product quality and safety, and thereby establish consumer confidence, a critical factor for sustainability. To build sustainable capacity, the project will establish in communities models of public–private–civic collaboration that will expose districts to technical expertise on a provincial and national scale, and to NGOs.
- (v) The sustainability of fortification will ultimately be determined by the consumers’ willingness to pay the small incremental cost for atta flour. In addition to the marketing and promotional activities to raise demand (para. 4.5), a number of activities will focus on understanding the factors affecting the consumer’s ability and willingness to shoulder the cost of fortification. The project will clarify how much the consumer can or is willing to pay for fortification and recommend strategies to achieve sustainable consumer financing.
- (vi) To ensure continuous supply, ADB will subsidize contracts with the millers, obliging them to continue production after the project ends. ADB has similar experiences in Central Asia.

The project outcomes may or may not suggest the possibility of fortifying all *chakkis* within the 5 years of the national flour fortification program’s phase 2. However, the project should define conditions under which small-scale fortification is sustainable and how phase-up

and expansion will be initiated. This will enable external funding agencies and the Government to understand what kind and scale of public investments are needed to create sustainable small-scale milling fortification that will be extended to the most vulnerable people in Pakistan. It should be noted that small-scale mills in Africa (e.g., Malawi, South Africa, Zambia, and Zimbabwe) have been cost-effective and sustainable, and people bought fortified flour at a higher price.

6. Participatory Approach

Because the *chakki* millers and their customers are dispersed throughout Pakistan, this project needs to be implemented by communities. While typical fortification technology is a centralized, top-down intervention, the success of small-scale milling depends on community production, action, and support. While taking advantage of centralized services whenever possible, ultimately production, control, marketing, and monitoring of small-scale fortification need to function in a decentralized community environment, and to engage local government, business, and NGOs.

Project inception, launch, implementation, and evaluation involve participatory planning workshops and other activities to build joint and supportive strategies among local partners. The project will improve a local product (wheat flour) and service (milling), enhancing the quality of local nutrition. These innovations and improvements come from the communities and will be facilitated by a participatory approach.

Primary beneficiaries and other affected groups and relevant description	Other key stakeholders and brief description
<p>Consumers of the <i>chakki</i> flour, primarily the poor, and women and children, who are at highest risk for micronutrient malnutrition</p> <p>Participating <i>chakki</i> millers, who will be enabled to provide a higher-quality product</p> <p>Local premix suppliers and maintenance business and organizations, who will have the opportunity to develop new businesses and hire more employees</p> <p>Local NGOs, which will have a new mandate and more activities in local food production and processing</p>	<ul style="list-style-type: none"> • Ministries of Health, Education, Trade, Industry • Pakistan Flour Millers Association • United Nations Children's Fund (UNICEF) and World Food Program • World Bank (Health Reform Projects) • ADB (Republic Health Project)

7. Coordination

Japan Bank for International Cooperation (JBIC), Japan International Cooperation Agency (JICA), and the World Bank have no activities in this area, but the project will closely collaborate with them. The Japanese embassy and JICA in Pakistan have been consulted, and both support the project.

8. Detailed Cost Table

Please refer to Appendix 1 for the detailed cost estimates.

C. Linkage to ADB Strategy and ADB-Financed Operations

1. Linkage to ADB Strategy

Document	Document Number	Date of Last Discussion	Objectives
<i>Country Strategy and Program Update (2005–2006): Pakistan</i>	Sec. M79-04	September 2004	(i) Greater focus on capacity building (ii) Increased allocation to social sectors (iii) Institutional strengthening of local governments for efficient and effective delivery of social services

2. Linkage to Specific ADB-Financed Operation

Project Name	Reproductive Health Project (RHP)
Project Number	PAK 30210
Date of Board Approval	20 December 2001
Loan Amount (\$ million)	\$36 million

3. State the above-mentioned project's development objective

The RHP aims to improve the health of women, girls, and infants.

4. List the project's main components

No.	Component Name	Brief Description
1	Improve the use of reproductive health (RH) services	1.1 Improve the quality and range of RH services 1.2 Increase access to RH services 1.3. Promote RH services
2	Strengthen RH capacity	2.1 Strengthen RH management 2.2 Develop human resources 2.3 Involve NGOs and the private sector

5. Rationale for Grant Funding versus ADB Lending

The RHP has a "pilot" character, and the proposed innovative approaches under the JFPR project need to be tested and adjusted under grant financing conditions before it is expanded to a loan. Participatory approaches, which will link the public and private sectors, including *chakkis*, require new strategies and operational modalities that need to be explored before the project is scaled up. The Government will not likely finance investments in pilot food fortification interventions in the private sector through a loan. A loan project can be discussed to scale the project up if the test is successful (without any commitment at this stage from the Government or from ADB).

D. Implementation of the Proposed Grant

1. Provide the Name of the Implementing Agency	Nutrition Wing, Ministry of Health (MOH)
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All procurements under the JFPR grant will be conducted in accordance with ADB's *Guidelines for Procurement*. The NGOs will be recruited by ADB in accordance with ADB's *Guidelines on the Use of Consultants* to provide the services for the implementation, management, and progress monitoring of the JFPR grant. Local NGOs and consultants will be contracted by the PIU in accordance with ADB's *Guidelines on the Use of Consultants*.

2. Risks Affecting Grant Implementation

Type of Risk	Brief Description	Measure to Mitigate the Risk
Producer resistance	New modes of business and production and higher costs may discourage producers from participating.	Temporary subsidies will allow production and marketing changes with no added financial costs. Community NGOs and the government will provide positive reinforcement.
Limited commercial infrastructure	Little local capacity and few local channels to supply millers with fortificant, feeders, and maintenance	Investing in district supply, blending, and distribution services
Limited communications infrastructure	Traditional media channels do not reach and have much impact in these communities.	Investing in community organizations to provide nontraditional social mobilization channels
Consumer resistance	Negatively perceived change (e.g., widespread fears about salt iodization) in the traditional atta may make consumers reluctant to purchase the fortified flour.	Extensive consumer acceptance tests have been completed and consumer research in the early project phases will identify and address objections.
Sustainability	Insufficient incentives for private enterprises to continue fortification after the period of public support	Create community support and demand for fortified flour and “prime the pump” to overcome initial financial barriers. Subsidize contracts with millers, obliging them to continue providing fortified flour after the project ends. Develop and test cost-sharing alternatives.

3. Incremental ADB Costs

Component	Incremental Bank Cost
Amount requested	None
Justification	
Type of work to be rendered by ADB	

4. Monitoring and Evaluation

Key Performance Indicator	Reporting Mechanism	Plan and Timetable for M&E
(i) District, provincial, and national public and private stakeholders agree to collaborate and develop systems to fortify flour at <i>chakkis</i> in two low-income areas.	Inception workshops and memorandums of understanding	By month 6
(ii) Up to 100 <i>chakkis</i> in two districts have the capacity (including feeders, premix procurement, training, and maintenance) to fortify flour.	Reports to the PIU and the PMO from (i) feeder manufacturers, (ii) fortificant suppliers, (iii) national food technology institutes, (iv) PIU compilation of feeder trials, (v) PIU site visits of project staff to <i>chakki</i> millers	By months 8–14
(iii) Collaborative government–NGO support systems at districts and provinces, including flour inspection	Reports to PIUs and PMO from relevant government agencies, NGOs, and national support	Months 14–36

Key Performance Indicator	Reporting Mechanism	Plan and Timetable for M&E
and testing, social marketing, and public education as well as nutrition monitoring established	institutions	
(iv) Two years' fortification of up to 28,000 MT/year of flour at 30 ppm iron and 1.5 ppm folic acid annually in up to 50 <i>chakkis</i> per district, for 150–175,000 consumers implemented	(i) Reports to the PIUs from <i>chakki</i> suppliers and support institutions; (ii) reports to the PIUs from government inspectors, and results of flour food analysis; (iii) reports of flour quality analysis by food technology institution; (iv) report of government health posts on Hb analysis and national medical lab of serum analysis; (v) consumer surveys tracking awareness and acceptance	From months 14–36
(v) Independent evaluation, analysis, and recommendations for the strategic expansion of <i>chakkis</i> developed, and a national policy process for integrating <i>chakkis</i> into the national flour fortification program facilitated	(i) Report from the independent evaluator to the PMO, (ii) recommendations from the independent evaluator and PMO, (iii) MOH proposal; (iv) national advocacy workshop by MOH	From Month 33 to 36
(vi) One third of WHO estimated average requirements (EAR) for iron and 100% EAR for folic acid added to average fortified flour consumption to reduce deficiencies by at least 20% among the target population	District and provincial health officials will identify local health centers as sentinel surveillance sites, where sampling for nutrition indicators will be integrated into ongoing treatment and diagnostic protocols.	By month 36

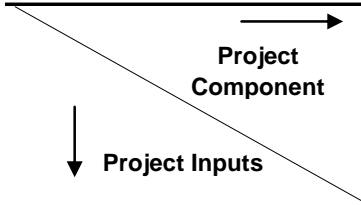
5. Estimated Disbursement Schedule

Fiscal Year (FY)	Amount (\$)
FY2005	600,000
FY2006	800,000
FY2007	597,500
Total Disbursements	1,997,500

Appendixes

1. Detailed Cost Estimate Tables
2. Project Timetable
3. Implementation Arrangements
4. Fund Flow Arrangements

SUMMARY COST TABLE
(\$)

 Project Component Project Inputs	Site Identification, Inception Process, and Office Start-up	Multisectoral District Capacity Building (infrastructure and know-how) and Participatory Program	22 month Implementation of Flour Fortification and Control	Evaluation, Policy Development, and Recommendations for Expansion	Project Management, Auditing, and Monitoring	Total (Input)	Percent
1. Civil Works							
2. Equipment and Supplies		215,000	214,838			429,838	21.50
3. Training, Workshops, Seminars, Public Campaigns	45,000	35,000	70,000	70,000	72,000	292,000	14.6
4. Consulting Services		130,000	153,000	225,000	90,000	598,000	29.9
5. Project Management	51,300	71,600	168,146	28,776	176,272	496,094	24.8
6. Other Project Inputs							
7. Contingencies	9,630	45,160	60,586	32,365	33,827	181,568	9.1
Subtotal JFPR financed	105,930	496,760	666,570	356,141	372,099	1,999,500	100.0
1. Government contribution	2,000	9,600	84,400	13,200	8,000	117,200	
2. Other Donor(s) Contributions							
3. Community's Contributions							
Total project costs	107,930	506,360	750,970	369,341	380,099	2,144,700	

JFPR = Japan Fund for Poverty Reduction.

Source: ADB estimates.

DETAILED COST ESTIMATES

Supplies and Services Rendered	Unit	Quantity	Cost Per Unit	Total (\$)	JFPR Amount	Procurement Method	Government
Component A: Site Identification, Inception Process, and Office Start-up			Subtotal	98,300	96,300		2,000
1.1	Equipment and supplies						
1.2	Training, workshops, seminars						
1.2.1	Site visits and meetings, costs include travel, hotel, meeting rooms, food	Workshop /meetings	5	5,000	25,000	25,000	
1.2.2	Inception workshops in each district (MOUS in place), costs include travel, hotel, meeting room, food for up to 50 participants	Project district meetings	2	10,000	20,000	20,000	
1.2.3	Government personnel: In-kind contribution	Days	50	40	2,000		2,000
1.3	Consulting services						
1.4	Management and coordination of this component						
1.4.1	Office start-up and personnel recruiting	Lump sum			10,000	10,000	
1.4.2	PMO Component 1 – Staff	Months	6	1,500	9,000	9,000	
1.4.3	PMO Travel and Per diem	Months	6	500	3,000	3,000	
1.4.4	PMO Operational Costs	Months	6	750	4,500	4,500	
1.4.5	PIU Component 1 – Staff	4 months x 2 PIUs	8	2,000	16,000	16,000	
1.4.6	PIU travel and per diem	4 months x 2 PIUs	8	100	800	800	
1.4.7	PIU operational costs	4 months x 2 PIUs	8	1,000	8,000	8,000	
Component B: Multisectoral District Capacity Building (infrastructure and know-how) and Participatory Program Development			Subtotal	461,200	451,600		9,600
2.1	Equipment and supplies						
2.1.1	Capital start-up incentive for equipment and improvements for local blenders	Project districts	2	10,000	20,000	20,000	
2.1.2	<i>Chakki</i> miller start-up production improvements and upgrades	Project <i>chakkis</i>	100	1,500	150,000	150,000	DP
2.1.3	<i>Chakki</i> miller training manual and education materials	Project <i>chakkis</i>	100	50	5,000	5,000	
2.1.4	Provincial/district food analysis laboratory capacity (Spectro or high-performance liquid chromatography)	Equipment/ project area food lab	2	20,000	40,000	40,000	DP
2.2	Training, workshops, seminars						
2.2.1	Consumer research, stakeholder analysis and marketing/social mobilization strategy, cost sharing strategy	Project district	2	7,500	15,000	15,000	

Supplies and Services Rendered	Unit	Quantity	Cost Per Unit	Total (\$)	JFPR Amount	Procurement Method	Government
2.2.2 District launch and promotion events: (training of local government and NGOs, development of a mobilization plan, group discussion, interviews)	Project district	2	10,000	20,000	20,000		
2.3 Consulting services							
2.3.1 TA to build local blenders and <i>chakki</i> supply firms	Project districts	2	10,000	20,000	20,000		
2.3.2 Feeder trials, fortificant optimization and final product development , costs include production costs, costs of tests (material and specialists), costs of changing production	Lump sum			50,000	50,000		
2.3.3 TA and capacity building for food control	Project districts	2	10,000	20,000	20,000		
2.3.4 TA and capacity building for nutrition and biological monitoring	Project districts	2	10,000	20,000	20,000		
2.3.5 TA, facilitation and capacity building for NGOs and/or public agency	Project districts	2	10,000	20,000	20,000		
2.4 Management and coordination of this component							
2.4.1 PMO Component A – Staff	Months	8	1,500	12,000	12,000		
2.4.2 PMO Travel and Per diem	Months	8	500	4,000	4,000		
2.4.3 PMO Operational Costs	Months	8	750	6,000	6,000		
2.4.4 PIU Component A – Staff	Months x 2 PIUS	16	2,000	32,000	32,000		
2.4.5 PIU Travel and Per diem	Months x 2 PIUS	16	100	1,600	1,600		
2.4.6 PIU operational costs	Months x 2 PIUS	16	1,000	16,000	16,000		
2.4.7 Government personnel: In-kind contribution	Days	240	40	9,600			9,600
Component C: 22 month Implementation of Flour Fortification and Control				Subtotal:	690,384	605,984	84,400
3.1 Equipment and supplies							
3.1.1 Procure fortificant concentrate and take delivery at district (22 months)	Kg	4,125	7.5	30,938	30,938	DP	
3.1.2 Blend and dilute fortificant concentrate with flour (22 months)	Kg	82,500	1	82,500	82,500		
3.1.3 Marketing materials and other expenses	Project districts	2	10,000	20,000	20,000	DP	
3.1.4 District regulatory inspection four samples/month for 22 months	Spot tests	8,800	3	26,400	26,400		
3.1.5 Outside analysis costs by national food lab 25% of samples	Laboratory tests	2,200	15	33,000	33,000		
3.1.6 District/provincial supplies for biological monitoring of Hb status and taking blood samples	Hb finger-prick tests	4,400	5	22,000	22,000		
3.2 Training, workshops, seminars							

Supplies and Services Rendered	Unit	Quantity	Cost Per Unit	Total (\$)	JFPR Amount	Procurement Method	Government
3.2.1 Community social mobilization (TV and radio spots, visits to and events in villages, organization of promotion events)	Project districts	2	25,000	50,000	50,000		
3.2.2 Consumer research, social marketing and mobilization TA (costs of local consultants and/or a local research institute to analyze consumer behavior and reaction)	Project districts	2	10,000	20,000	20,000		
3.3 Consulting services							
3.3.1 Maintenance and technical trouble shooting (2 years)	<i>Chakkis</i>	100	500	50,000	50,000	DP	
3.3.2 TA and monitoring for food control	Project districts	2	20,000	40,000	40,000		
3.3.3 TA and 30 x 30 impact survey by national medical lab (costs cover blood test and biochemical analysis)	Survey subjects	900	70	63,000	63,000		
3.4 Management and coordination of this component							
3.4.1 PMO Component A - Staff	Months at 75%	22	1,125	24,750	24,750		
3.4.2 PMO Travel and Per diem	Months at 75%	22	375	8,250	8,250		
3.4.3 PMO Operational Costs	Months at 75%	22	563	12,386	12,386		
3.4.4 PIU Component A - Staff	Months at 90% x 2 PIUS	44	1,800	79,200	79,200		
3.4.5 PIU travel and per diem	Months at 90% x 2 PIUS	44	90	3,960	3,960		
3.4.6 PIU operational costs	Months at 90% x 2 PIUS	44	900	39,600	39,600		
3.4.7 Government personnel: In-kind contribution	Days	2,110	40	84,400			84,400
Component D: Evaluation, Policy Development, and Recommendations for Expansion			Subtotal:	336,976	323,776		13,200
4.1 Equipment and supplies							
4.2 Training, workshops, seminars							
4.2.1 International meeting expenses	Lump sum: 2-3-day international meeting			50,000	50,000		
4.2.1 District meetings	Project districts	2	10,000	20,000	20,000		
4.3 Consulting services							
4.3.1 Independent evaluation (costs of hiring an independent research institute, which will accompany the project over the whole period of implementation. Costs include staff time, travel costs and overhead)	Cost plus fee contract			200,000	200,000		

Supplies and Services Rendered	Unit	Quantity	Cost Per Unit	Total (\$)	JFPR Amount	Procurement Method	Government
4.3.2 TA in developing policy and implementation options for expansion	Lump sum			25,000	25,000		
4.4 Management and coordination of this component							
4.4.1 PMO Component A - Staff	Months at 25%	22	375	8,250	8,250		
4.4.2 PMO travel and per diem	Months at 25%	22	125	2,750	2,750		
4.4.3 PMO operational costs	Months at 25%	22	188	4,136	4,136		
4.4.4 PIU Component A - Staff	Months at 10% x 2 PIUS	44	200	8,800	8,800		
4.4.5 PIU travel and per diem	Months at 10% x 2 PIUS	44	10	440	440		
4.4.6 PIU operational costs	Months at 10% x 2 PIUS	44	100	4,400	4,400		
4.4.7 Government personnel: In-kind contribution	Days	330	40	13,200			13,200
Component E: Project Management, Auditing, and Monitoring				Subtotal:	346,272	338,272	8,000
PMO Component A - Staff	Included in each component						
PMO travel and per diem	Included in each component						
PMO operational costs	Included in each component						
PIU Component A – Staff	Included in each component						
PIU travel and per diem	Included in each component						
PIU operational costs	Included in each component						
Administration and external auditing: EA/MOH nutrition wing administration (5%)	5% of JFPR budget			86,272	86,272		
Government personnel: In-kind contribution	Days	200	40	8,000			8,000
T.A: Milling consultant	Months	5	18,000	90,000	90,000		
T.A. Marketing consultant	Months	4	18,000	72,000	72,000		
T.A. Program consultant	Months	5	18,000	90,000	90,000		
Project Totals				1,933,132	1,815,932		117,200
10% Contingency (JFPR Grant)				181,568	181,568		
Totals				2,114,700	1,997,500		

DP = direct purchase, EA = executing agency, JFPR = Japan Fund for Poverty Reduction, MOH = Ministry of Health, MOU = memorandum of understanding, NGO = nongovernment organization, PIU = project implementing unit, PMO = project management office, TA = technical assistance. Source: ADB estimates.

PROJECT TIMETABLE

Activity	Project Month																																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
Component A																																							
Set-up PMO	■	■																																					
Site finalization		■	■																																				
Set-up PIU			■	■	■	■																																	
Inception process				■	■	■	■	■						■								■					■							■					
Component B																																							
District fortificant blending, feeder supply and maintenance							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Chakki training, testing and feeder installation							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
District and provincial food control improvements and upgrades							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
District and provincial nutrition monitoring improvement and upgrades							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Participatory planning for social marketing and mobilization							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Launch events														■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Component C																																							
District premix blending, feeder supply and maintenance															■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
District social marketing and mobilization															■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
District and provincial government food control and Quality Assurance															■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
District and provincial nutrition and biological monitoring															■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
30 x 30 impact survey by national medical lab															■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Component D																																							
Independent evaluation							■	■							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Develop policy and implementation options for expansion																																						■	■
National and district meetings																																						■	■

■ = activity beginning to end, ▨ = semi annual project review, PIU = project implementation unit, PMO = project management office.

IMPLEMENTATION ARRANGEMENTS

1. The Executing Agency is the Nutrition Wing of the Ministry of Health (MOH), the responsible government agency for national food fortification policy and programming. MOH will oversee the project activities; facilitate coordination with selected local governments; link the Japan Fund for Poverty Reduction (JFPR) project, Reproductive Health Project (RHP), and projects supported by other external funding agencies in health and nutrition improvement, especially of poor women and children. The Nutrition Wing will work in close cooperation with Ministry of Planning, provincial and district governments, United Nations Children's Fund (UNICEF), the Micronutrient Initiative, Pakistan Flour Millers Association, Association for Social Development, and local nongovernment organizations (NGOs) in the selected project areas. The Micronutrient Initiative will act as technical advisor. Organizations supplying contracted services, including expertise in food technology, laboratory analysis, epidemiology, communications, and marketing, as well as program development and evaluation, will be identified through a transparent process after inception.

2. The National Fortification Alliance (NFA) will act as a central advisory committee. Chaired by the minister of health, the NFA is a multisectoral body representing public, private, and civic stakeholders contributing programs to reduce micronutrient deficiencies. A list of NFA members is in an annex to this aide memoire.

3. The JFPR project will establish a project management office (PMO) based in Nutritional Wing. The PMO will do the following:
 - (i) Collaborate with the MOH Nutritional Wing in all fiduciary matters and communications with the Asian Development Bank (ADB).
 - (ii) Supervise and finalize site selection and establish two project implementation unit (PIUs).
 - (iii) Act as the primary communication channel to federal and provincial government agencies.
 - (iv) Contract with supporting technical institutions and facilitate their interaction with the PIUs and project communities.
 - (v) Contract with major suppliers of fortificant and material to project districts and facilitate their interaction with the PIUs and project communities.
 - (vi) Propose to ADB the engagement of domestic or international consultants in accordance with ADB's *Guidelines on the Use of Consultants* or other arrangements acceptable to ADB.
 - (vii) Channel funds to the PIUs, which will each maintain separate subaccounts for expenses and subcontracts at the districts.
 - (viii) Review and compile monthly progress reports received from the PIUs and other national implementing agencies.
 - (ix) Submit comprehensive 6-month progress reports to the MOH Nutritional Wing and ADB.
 - (x) Facilitate the work of the MOH Nutritional Wing.
 - (xi) Prepare final project reports.

4. After final identification of project districts, the PIUs will be established in conjunction with the local government and/or local NGOs associated with the RHP. The PIUs will be responsible for day-to-day local project administration, including the following:

- (i) Coordinate, facilitate, and monitor activities of district and subdistrict local government and personnel; RHP-affiliated NGOs and other community organizations, *chakki* millers, and local suppliers.
- (ii) Coordinate, facilitate, and monitor activities of national technical support agencies at the districts.
- (iii) Compile monthly documentation and provide the PMO with monthly progress reports.
- (iv) Participate in semiannual project reviews.
- (v) Assist local stakeholders.
- (vi) Facilitate local evaluation activities.

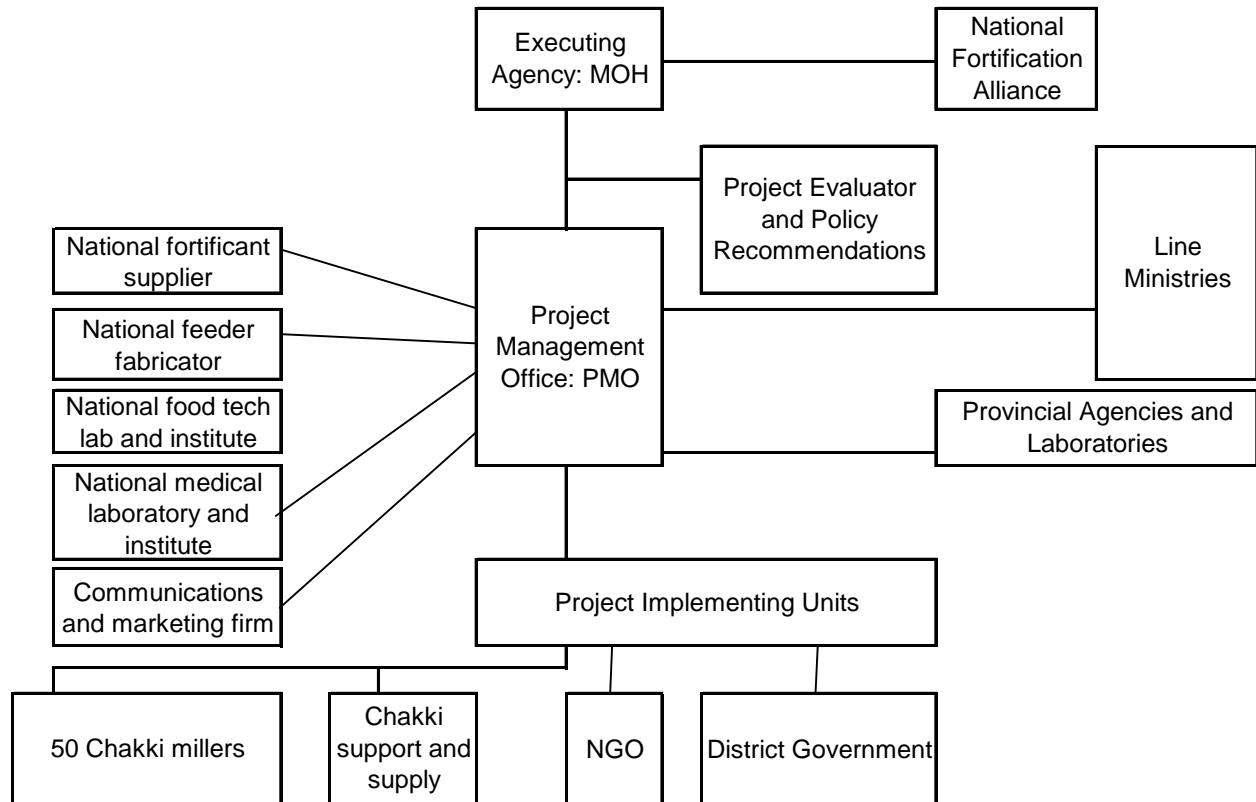
5. All procurement under the project will be conducted in accordance with ADB's *Guidelines for Procurement*. Consultants will be hired according to ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB on the engagement of domestic consultants by executing agencies. A project administration manual detailing all implementation and procurement arrangements will be prepared before project implementation.

6. The PMO and PIUs will prepare a monitoring and evaluation framework with a set of key performance indicators, and produce quarterly monitoring reports. Monitoring will focus on the effectiveness, appropriateness, sustainability, and replicability of pilot interventions. A baseline and end-of-project survey will be conducted to assess the prevalence of nutrition deficiencies. Performance monitoring will fully involve the project beneficiaries. Based on the monitoring reports, semiannual project reviews will be conducted to adjust project inputs and the use of project resources.

7. The PMO is responsible for compiling quarterly progress reports received from the PIUs and implementing agencies and for submitting a comprehensive 6-month progress report to ADB. The PMO will also prepare and submit an annual project review report and submit a final report within 2 months of project completion.

8. The project will be implemented over 3 years. In the first 6 months, the project will focus on components 1 and 5, including establishing the PMO and PIUs; identifying the final sites; and reaching formal agreements among central, provincial, and local governments, and between NGOs and the private sector. Component 2, in the next 8 months, will include contracting with major technical service providers and other suppliers and building capacity of all stakeholders. Component 3, in the next 22 months, will involve fortifying *chakki* flour, performing quality assurance and support services, and providing fortified flour to about 150,000 consumers. Component 4 (evaluation) will be initiated during capacity building under component 2, and continue periodically through component 3, becoming more intensive during the final 6 months. Development and advocacy activities for national policy and the sustained operation of fortification in the project districts will be implemented during the final 3 months of the project.

Figure A3: Implementation Structure

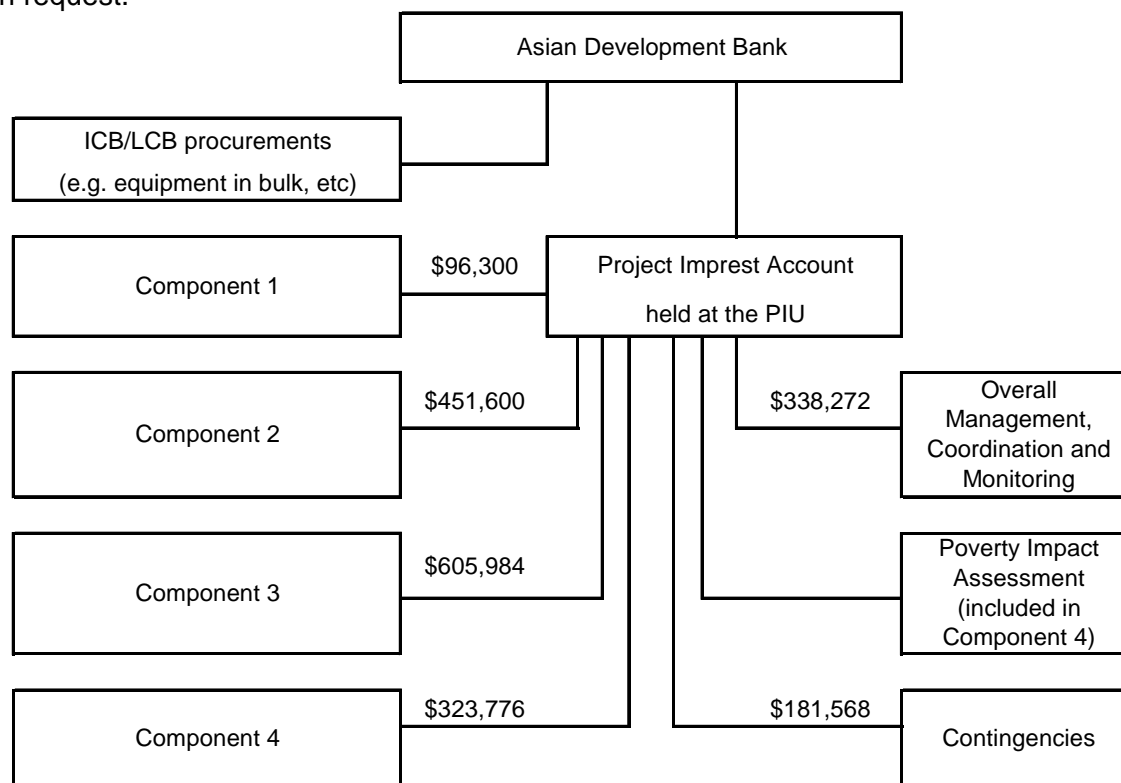


MOH = Ministry of Health, NGO = nongovernment organization, PMO = project management office.

FUND FLOW ARRANGEMENTS

1. Funds will be disbursed under the terms of a contractual arrangement with a Government-approved party acceptable to the Asian Development Bank (ADB), through the project management office (PMO), which will maintain a separate Japan Fund for Poverty Reduction (JFPR) imprest account at a bank acceptable to ADB. The PMO will channel funds to project contractors and the two project implementation units (PIUs), which will each maintain separate subaccounts. The JFPR imprest account will be established, managed, replenished, and liquidated in accordance with ADB's *Loan and Disbursement Handbook* and detailed arrangements agreed on between the Government and ADB. The initial advance to the imprest account should be based on approved contracts and planned expenditures for the first 6 months of the project. However, total advances at any time should not exceed estimated expenditures for the next 6 months or 10% of the grant amount, whichever is lower. The statement of expenditures procedure will be used for reimbursing eligible expenditures and liquidating the imprest account for any individual payment transaction up to \$5,000 equivalent.

2. The PMO shall (i) maintain, or cause to be maintained, separate accounts for the JFPR project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied by independent auditors acceptable to ADB; (iii) as soon as available but not later than 6 months after the end of the fiscal year, furnish ADB with certified copies of such audited accounts and financial statements and the related report of the auditors, including the auditor's opinion on the use of the JFPR funds and the imprest account and statement of expenditures provided under the project, all in English; and (iv) furnish ADB other information concerning such accounts, financial statements, and audits upon request.



ICB = international competitive bidding, LCB = local competitive bidding, PIU = project implementation unit.