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Assessment of Decentralized Food Models in India's ICDS Program

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ACRONYMS & GLOSSARY

ADO	Agricultural Development Officer
AED	Academy for Educational Development
AP	Andhra Pradesh
APMAS	Andhra Pradesh Mahila Abhivruddhi Society
AWC	Anganwadi Center (ICDS community-level service point)
AWW	Anganwadi Worker
BCC	Behavior Change Communication
BPF	Best Practices Foundation
BPL	Below Poverty Line
CDP	Child Development Project
CDPO	Child Development Project Officer (ICDS block-level official)
<i>Chetna</i>	Awareness or Consciousness
CIA	Central Intelligence Agency
CIDA	Canadian International Development Agency
CSB	Corn Soy Blend
<i>Daliya</i>	Porridge
DFM	Decentralized Food Model (also know as a Local Food Model (LFM))
DFM Group	The people who work in the DFM, usually a group of 10–12 women (in Bihar, the AWW performs this function herself)
DFM Site	The location where the DFM operates, usually providing food for 20-100 nearby AWCs (occasionally more)
DPO	District Program Officer
DRDA	District Rural Development Agency
DWCRA	Development of Women and Children in Rural Areas program
FANTA	Food and Nutrition Technical Assistance (USAID-funded project, managed by The Academy for Educational Development)
FCI	Food Corporation of India
FPS	Fair Price Shop
FY	Fiscal Year (April 1 through March 31 for GOI)
GEAC	Genetic Engineering Approval Committee
GOI	Government of India
<i>Gramin</i>	Rural
HAZ	Height-for-age Z-score
HH	Household
ICDS	Integrated Child Development Services (a scheme under MOWCD)
IFPRI	International Food Policy Research Institute
IKP	Indira Kranti Patham
IMR	Infant Mortality Rate
INHP	Integrated Nutrition and Health Project
<i>Jowar</i>	Millet, a wheat-like grain
LFM	Local Food Model (see DFM)
<i>Mahila</i>	Women
<i>Manch</i>	Platform
<i>Moong Dal</i>	Green gram lentils — scientific name <i>Vigna Radiata</i>

MOWCD	Ministry of Women and Child Development
MP	Madhya Pradesh
MPCS	Madhya Pradesh Civil Supplies
MPSAIC	Madhya Pradesh State Agro Industries Corporation
MS	Mahila Samakya (women's groups active in Bihar and other states)
<i>Murmura laddoo</i>	A sweet dish prepared of puffed rice and molasses
NFHS	National Family Health Survey
NHD	Nutrition and Health Day
PR&RD	Panchayati Raj and Rural Development
Panjeeri	Weaning Food
PDS	Public Distribution System
PHC	Primary Health Center, Primary Health Care
PRI	Panchayati Raj Institution
RACHNA	Reproductive and Child Health, Nutrition and HIV/AIDS Program
<i>Rozgar</i>	Employment
Rs.	(Indian) Rupees—During assessment, US\$1 = approximately Rs. 40
RTE	Ready To Eat (food)
<i>Sahayatha</i>	Help
<i>Samuh</i>	Group
SAPAP	South Asia Poverty Alleviation Program
SGRY	Sampoorna Grameen Rozgar Yojana (a scheme under PR&RD)
SGSY	Swarnjayanti Gram Swarozgar Yojana (a scheme under PR&RD)
SHG	Self-Help Group
SNP	Supplementary Nutrition Program
SOW	Scope of Work
SSDS	Social Sectors Development Strategies, Inc.
<i>Swarn Jayanti</i>	Golden Jubilee
<i>Swayam</i>	Self
RCH	Reproductive and Child Health — a program of the MOHFW
TFR	Total Fertility Rate
THR	Take-home Ration
USAID	United States Agency for International Development
DWCD	Department of Women and Child Development
WAZ	Weight-for-age Z-score
WDC	Women's Development Corporation
WFP	World Food Programme
<i>Yojana</i>	Scheme

EXECUTIVE SUMMARY

The Assessment

The objective of the assessment was to analyze and document:

1. The operational feasibility and financial viability of the Decentralized Food Model (DFM), also known as the local food model (LFM), used in the Government of India's Integrated Child Development Services (ICDS) program;
2. The DFM's impact on the capacity of ICDS to operate its core program and achieve its primary objectives;
3. The implications of these findings for potential replication and scale-up of DFMs through ICDS in collaboration with other Government Departments and programs.

A team of four researchers used a variety of data sources — documents, individual and group interviews, focus group discussions, direct observation, quantitative data analysis of financial data — to address these key questions. Data was collected in ten field locations (six in Madhya Pradesh, two in Andhra Pradesh, and two in Bihar) as well as in extensive meetings at state, district and block levels in the three states, as well as in Delhi.

The ICDS Supplementary Nutrition Program

The Supplementary Nutrition Program (SNP) is one of the six components of the ICDS scheme of the Ministry of Women and Child Development (MOWCD). It is the largest program of its kind in the world.¹

While its purposes have become broader and more complex over time, the main objective of the SNP is to reduce malnutrition in India's children. Although ICDS has received much criticism for its very limited impact to date on childhood malnutrition, ICDS is the only GOI nutrition program whose coverage extends from infants and children below six, to pregnant & lactating women and vulnerable adolescent girls. Its importance as an instrument to secure children's right to food cannot be overstated.

Currently ICDS is operating under several new mandates based on rulings from India's Supreme Court and incorporated into the 11th Five-Year plan. These include:

- Universalize the ICDS program. This means that the network of Anganwadi Centers² (AWC) should be extended to cover every child below six, as well as all pregnant women and nursing mothers and eligible adolescent girls throughout the country.
- Decentralize the SNP to ensure community participation in the process of food provision — a legal mandate for the transition to DFMs.

¹ Since the inception of ICDS in 1975, CARE has supported its supplemental feeding component with food commodities provided by USAID under PL-480 Title II. In some respects, this program is a continuation of the US government's Title II food aid program that began in India in 1950, with operational support from CARE (CARE 2006)

² In principle, an AWC covers a population of roughly 1,000, typically several villages.

Decentralized Food Models

Traditionally, India's large-scale supplementary feeding programs have followed a "centralized" model, where food to be distributed at the grass-roots level is procured from public or private vendors at the national or state level. Recently a new strategy called the Decentralized Food Model (DFM) has been developed whereby people at the local level, such as the Self Help Groups created under the Government of India's SGSY³ scheme, procure, process, and distribute food to the ICDS Anganwadi Centers.

Many variations on this model have now been tried in a number of Indian states, differing in several characteristics, some of which are:

- *Choice of service providers:* Established SGSY SHGs; other groups of women/mothers (existing or newly formed); individual AWC workers; etc.
- *Degree of "convergence":* Whether or not working linkages are established with other government departments such as PR&RD (through their SGSY scheme).
- *Source and extent of external support (initial; on-going):* Financial support and/or technical assistance from CARE; from WFP; from ICDS; from other government programs.
- *Financing:* Relying solely on cash reimbursement for services (with or without advance funding), or drawing on SHG financial resources and credit when necessary.
- *Type of food to be provided:* A single basic recipe; a variety of recipes from an approved list; or whatever is available in the market.

Perspectives on the role of DFMs

Our discussions with the varied stakeholders and institutional actors involved in supplementary feeding programs in India revealed many different perspectives:

- ICDS, according to the ICDS stakeholders whom we met, would like to use the DFM to involve communities at the grassroots level; to change the image of ICDS as the one-product "Porridge Department"; to avoid the bureaucracy and corruption found in some of the vendor supply chain models; and to supply food that is fresh and more attractive to ICDS program participants.
- CARE has been deeply involved in the development of DFMs, working in collaboration with ICDS and other GOI departments, and both CARE and USAID are interested in "leaving a legacy" of improved supplementary feeding programs which they have supported for so long in India.
- In terms of GOI "convergence" — the breaking down of bureaucratic walls between major departments — the Ministry of Health and Family Welfare (MOHFW) and the Panchayati Raj and Rural Development (PR&RD) Department are both interested in the DFM. MOHFW is interested in its potential impact on health status and demand for health services at the Anganwadi Centers where supplementary food is distributed, and PR&RD is interested in the DFM's potential impact on poverty alleviation and the creation of livelihoods for community-based groups that produce the food.

³ A poverty-alleviation program of the Panchayati Raj & Rural Development Department, to help those below the poverty line by encouraging them to form small groups and apply for bank credit and government subsidies.

- Finally, and most important, at the grassroots level, there is the perspective of the women who are the members of the DFM Groups⁴ that have been formed. They are of course interested in the real or potential livelihood provided through a DFM. Beyond this, the groups which have succeeded in establishing themselves as viable local enterprises have experienced multiple spill-over benefits. These spill-over benefits are astonishing in some cases, achieving many of the purposes shared by the institutional stakeholders described above, but also going beyond those benefits, building the economic, social, and political capital of some of India's poorest women. Not only do these women report significant impacts on their behavior in their own families, including improved nutrition and education of their own children, especially daughters. They also have notably increased understanding of, involvement in, and commitment to nutrition practices in their communities. They appear capable of assuming important roles as agents of change in their communities.

The “Asian Enigma”

An influential paper entitled “The Asian Enigma” (Ramalingaswami et al, 1996) focused attention on the startling fact that childhood malnutrition in South Asia, and especially India, is nearly double that of Sub-Saharan Africa. That analysis identified three major causes, of which the first two are:

- Poorer nutritional status of women, particularly pregnant women (approximately 30% of Indian babies are born with low birth weight, which is the single best predictor of childhood malnutrition);
- The low status and lack of empowerment of women in India⁵.

The “spill-over benefits” described above from creating successful nutrition-oriented group enterprises should directly address these two fundamental causes of malnutrition in India, by empowering the women themselves, raising their status, and potentially giving them an influential role in promoting better nutrition in their communities.

State-level Assessments

Madhya Pradesh

The original DFM model in MP, based on engaging the SGSY Self Help Groups, had many strengths, particularly convergence with the PR&RD poverty-alleviation effort, as well as technical and financial policies that allowed the DFM Groups to thrive. Indeed, MP is where the SHG-based DFM has been best developed and most widely propagated, and it is now in place state-wide.

However, both the livelihoods provided by the DFM Groups and the spill-over benefits are currently in jeopardy, and the state program itself may soon face a major crisis. Program officials

⁴ Throughout this report, we attempt to distinguish between the “models” themselves as approaches to decentralized services, and the women who operate them, by referring to the latter as “DFM Groups” even though, in the current Bihar approach, the “group” consists only of an individual Anganwadi Worker.

⁵ While it is beyond the scope of this assessment to consider the impact of the SNP on nutritional status, these issues are covered in more detail in the Introduction and Background chapter under the section, “Situating this Assessment in Context.”

and state-level policy makers do not appear to understand the underpinnings of the successful and relatively robust model they have created in MP. Policy and operational decisions are currently being implemented that may well destabilize and possibly destroy the DFM Groups that have been established there. Policy makers urgently need to be better informed about the basic elements that underpin the financial viability of their DFM Groups.

A recent major policy change by the state requires that a different food recipe be provided on each of the six days in a week; this complicates food production, packaging and transport in multiple ways that erode the financial viability of the DFM, unless this is understood and payment rates are also raised. Since the focus of the six-recipe policy is on spot-feeding and not the take-home-rations (THR), the policy has little relevance to the underlying issues of childhood malnutrition, as the 3- to 6-year-olds who receive spot-feeding are not the most vulnerable group; THRs for the under-3-years-olds and for pregnant and lactating (P&L) women are more effective in reducing childhood malnutrition at the most vulnerable points in a child's development.

MP has decided to contract separately with MP State Agro Industries for the weaning-food component of the SNP, sharply reducing the "market" for the SHG's output, impacting on their viability. The state is also implementing a system that will put the funds for the food directly under the control of the Anganwadi Worker (AWW). This will again complicate and undermine the current SHG-DFM in MP, and possibly, as has already been seen in Bihar, encourage corruption. Policy-makers in MP should study more closely their own DFM experience, and observe what has and has not worked over the past three years.

Andhra Pradesh

In AP, the DFM approach, based on strengthening Mothers Committees and developing them into an independent form of SHG working under ICDS, has to date only been pilot-tested in four blocks. The AP DFM has demonstrated considerable success, although based in part on financial arrangements for advance payments which would apparently not be possible if scaled up across the state. The DFM Groups were less financially robust than those in MP, since there was no convergence with the highly effective SGSY SHGs.

Results of these pilot tests are not widely understood in AP at the state level — the policy makers and program officials we met with there were unable to articulate what has been learned from the CARE-supported DFM experiment, and how that experience should inform their planning for scale-up. We did not sense administrative or political commitment to any well-defined future DFM approach in AP. They did express an (as yet undefined) intention to converge on future plans with PR&RD through the World Bank-funded Indira Kranti Patham (IKP) Project, although there appears to be some reluctance, perhaps related to issues of budget control.

It is ironic that in AP, the state best known for its vibrant SHGs, established SHGs have not been used as the basic DFM platform. Policy-makers from AP might usefully study the DFM in MP to better understand the benefits of convergence with PR&RD (or a similarly suitable program) and of using SHGs that have already been established, rather than strengthening Mothers Committees and developing them into a form of SHG working under ICDS. ICDS having sole "ownership"

of the DFM — rather than converging with SGSY or an equivalent partner — is not necessarily a good thing; convergence with a government department with capacity building skills in grassroots entrepreneurship, federation building and credit linkages should constitute an integral component of any DFM operating as a grassroots enterprise.

Bihar

ICDS has created a very different DFM in Bihar by relying, not on local groups operating as “enterprises” and servicing 20–100 AWCs, but on the AWWs themselves. ICDS establishes local “Food Procurement and Monitoring Committees,” typically consisting of the AWW, 4 mothers (one of whom is president), and one or two elected representatives. Food is purchased and cooked by the AWW and her helper in the AWC. The strength of this model is its simplicity, requiring minimal input from ICDS. Major weaknesses include a history of erratic food availability due to funds-flow and other problems (although the number of days that food is available has apparently increased recently, and this is an important aspect of progress). The data recording and reporting system was observed to be quite useless, since all activity and expenditure was simply recorded according to ICDS norms, rather than disclosing actual services and program costs.

Although the current state government has made good progress in strengthening social programs over the past few years, transparency is a major problem, and the DFM is known to be fraught with corruption. The availability of over Rs. 5,000 per month in cash directly to the AWW (who otherwise receives only Rs. 1,000/month as an honorarium) and the use of unprocessed grains that are readily marketable both facilitate abuse within the system, particularly in the least accessible areas or where corruption is endemic and the AWW is under pressure to make payments to others.

In light of these serious problems, Bihar is piloting a new model in two districts, beginning in the summer of 2007. The planned model will, in some respects, resemble the original SHG model in MP, in that a “community kitchen” staffed by members from SHGs will produce prepared and packaged food that is provided to approximately 20 AWCs. Bihar ICDS officials have selected pilot districts where women’s groups are particularly strong, as ICDS is converging with women’s programs active in these districts. They expect to watch the pilots closely and learn from them, as they plan scale-up over the next six months. However, the major difference between the planned Bihar model and the MP SHG model is that the women working in the community kitchens will be paid staff, not entrepreneurs running a “business” that they own themselves. This is apt to be a decisive difference, as the women are unlikely to have the same sense of ownership or commitment, and there will be little or none of the spill-over benefits observed in the DFM Groups operating as grassroots enterprises. (Orissa has apparently already attempted and abandoned a model where the women were paid workers rather than the active entrepreneurs in a DFM.) We also anticipate that the Bihar pilot will require more intensive inputs from ICDS both in establishing the community kitchens and in overseeing them, partly because the women will not be entrepreneurs, and partly because no convergence is planned with a department or program with good capacity-building skills in grassroots entrepreneurship and credit linkages, unlike the pattern in MP.

Summary of Findings, Conclusions and Recommendations

1. Are DFMs Operationally Feasible and Financially Viable?

Findings

- DFMs are in fact operating and thriving in several states, either scaled-up to cover the whole state, as in MP, or still on a pilot basis, as in AP.
- GOI budget per-participant reimbursement ceilings are not unreasonable in light of actual program cost experience, but may need to be increased if policy changes dictate more costly modes of service provision (e.g. complex, expensive recipes).
- Some variations of the model, particularly the initial model in MP, are more effective, more robust, more transparent, and/or provide more of the crucial “spill-over” benefits than others.
- In particular, where DFM Groups operate as economic “enterprises”, they are more financially stable, more effective in assuring continuous food availability, and remarkably good at empowering their members economically, socially and politically.
- Some variations have proven ineffective or harmful, such as the new six-recipe-per-week policy in MP, and the reliance on individual AWWs in Bihar, particularly where management systems do not effectively control opportunities for corruption.
- Even the most successful programs are highly vulnerable to poorly conceived policy shifts which can seriously threaten their viability.

Conclusions

- Yes, DFMs can be operationally feasible and financially viable, if properly designed, managed, and supported.
- Several characteristics of the model can successfully be varied to meet local conditions and requirements.
- The SGSY Self Help Groups appear to offer the best platform for DFM design

Recommendations

- Convergence, particularly with SGSY-like schemes with access to subsidized credit and skill in capacity building for micro-credit and micro-enterprise, should be a key feature of program design.
- The revenue and cost drivers that underpin financial viability must also be carefully considered in designing and establishing a DFM. (These factors are analyzed in detail in Section III of this report.)
- Policy and operational decisions should only be taken after careful consideration of their potential impact on the viability of the DFMs.
- Design of the DFM should promote transparency through involvement of groups and active monitoring and supervision based on accurate local records.
- DFM implementation should be continually monitored, and the lessons learned fed into an extensive program of formal and informal training and knowledge exchange.

2. What is the DFM's Impact on ICDS's Capacity to Operate its Core Program and Achieve its Primary Objectives?

Findings

- Although the ICDS mandate is being broadened, the SNP component is both *the* major part of its core program and a primary objective.
- According to many stakeholders, the most effective way of attracting program participants to the AWCs where they will then receive other ICDS program services appears to be the availability of supplementary food, especially the THR. This has been shown clearly with the success of Nutrition and Health Days.⁶
- Data collected from stakeholder interviews and focus group discussions consistently confirmed that the DFMs effectively facilitate ICDS's capacity to operate its core program and achieve its primary objectives.
- In extensive discussions with ICDS official at all levels, the model was consistently seen as an improvement over the vendor-based system, without imposing significant burden on ICDS workers, or detracting from their non-SNP responsibilities.

Conclusions

- The transition to a DFM should not impose significant additional burden on ICDS.
- In fact, successful implementation of a DFM can strengthen existing ICDS services by improving the perceived quality of the SNP and attracting more participants to the ICDS program as a whole.
- If properly implemented, convergence can result in cost sharing and a better division of labor, leading to more efficient use of resources across all departments.
- In a successful DFM based on vigorous and committed SHGs, the women operating them represent an important unexploited opportunity. These women are self-confident and often quite vibrant actors in the community leadership role they have gradually assumed. If provided with additional training, many of them could be powerful agents of change acting on ICDS interests within their communities, not only for the SNP but for other ICDS services.

Recommendations

- Self Help Groups functioning as independent economic enterprises should form the base for the program, rather than workers paid a salary for their services.
- Once established, the Self help Groups should be exploited as a broader resource in support of ICDS nutrition and other activities.

⁶ A fixed-day, fixed-site strategy termed a Nutrition and Health Day (NHD) was promoted under CARE's INHP, where both nutrition (food as Take Home Rations) and health services are delivered collectively. A quantitative survey in 2001 showed significant differences in coverage rates in areas with NHDs, as compared to those without.

3. What are the Implications for Potential Replication and Scale-up of DFMs through ICDS in collaboration with other Government Departments and Programs?

Findings

- MP has already demonstrated that state-wide scale-up can be done successfully.
- The DFM approach provides an excellent platform for convergence between ICDS and other government agencies concerned with poverty alleviation and the development of grassroots enterprises, particularly SGSY.
- Initial success can be followed by serious operational and financial problems, often inadvertently caused by policy decisions during program implementation.
- Providers, such as the individual SHGs, have little bargaining power to negotiate or resist potentially threatening policy decisions.
- Program successes and failures are well understood locally at block and district levels, much less so at higher levels, and little knowledge is exchanged across states.
- Better services lead to increased demand.

Conclusions

- The assessment team found no substantial obstacles to prevent nation-wide scale-up.
- Unsound policy decisions are the major on-going threat after the pilot phase.
- Providers, such as the SHGs, need increased bargaining power to ensure that policy decisions, especially those with financial implications, are negotiated fairly.
- Formal and informal means are needed for knowledge transfer in and across states.
- After launch, on-going support is essential from ICDS and “convergence” partners.
- Demand for services could rise sharply, as food availability and quality increase, which together with universalization will have major budget implications.

Recommendations

- The ICDS should work toward implementation of the DFM approach throughout the SNP nation-wide.
- ICDS policy for the decentralization of food support should require convergence, preferably with SGSY, as part of nation-wide scale-up, both for initial implementation and for on-going support, such as policy analysis, banking assistance, etc.
- The current power imbalance between ICDS and decentralized providers should be mitigated by supporting the establishment of provider federations as part of scale-up.
- The position of the SHGs should be strengthened by entering into written contracts with them, requiring agreement by both parties to any changes that materially affect them.
- ICDS should create an effective mechanism for on-going learning and knowledge exchange during scale-up, to assist states in learning from each other's experiences, and to help avoid unwise and possibly disastrous local policy decisions.

Exhibit 1 summarizes the advantages and disadvantages of the different ICDS food models, Exhibit 2 offers a financial profile of DFMs, and Figure 1 highlights the three key programmatic areas of convergence for ICDS related to DFMs.

Exhibit 1: Advantages and Disadvantages of Different Food Models

Criteria	Decentralized Food Models				Centralized Models	
	AP Mothers Committees	MP Self Help Groups	Bihar Current AWW & AWC Only	Bihar Future Pilot Community Kitchens	Vendor	State Corporations
Acceptability of Food	High: fresh and based on local tastes.	High: fresh and based on local tastes.	High: fresh and based on local tastes.	Unknown: planned according to local tastes	Medium:	Poor-Medium: lacking freshness, — panjeeri in MP not based on local tastes.
Quality Assurance	High	High	Medium	Medium (expected)	Medium	Low or Unknown
Availability of Food	Excellent: except during set-up when machinery broke down	Excellent: available even during ICDS fund flow disruptions	Poor-Fair: due to ICDS fund flow disruptions and corruption	Unknown	Poor-Fair: Many food disruptions reported	Good
Transparency in procurement	Excellent: No motivation for women to cheat, as they would cheat themselves	Excellent: Procurement of wheat from FCI; no motivation for women to cheat	Poor: AWC worker known to have problems with leakages	Unknown	Low	Low
Transparency in distribution to AWCs	High transparency as RTE bags delivered weighed and counted and reimbursement according to amount delivered	High transparency as RTE bags delivered weighed and counted and reimbursement according to amount delivered	Poor: AWC worker buys the raw materials so controls what is purchased and whether or not it goes to AWCs	Transparency expected to be higher due to weekly monitoring and public display of records	Unknown	Unknown
Transparency in distribution by AWC worker to community	Very Good: RTE less easy to resell and therefore more likely to be distributed	Very Good: RTE less easy to resell and therefore more likely to be distributed	Poor: leakages believed to be particularly high for THRs which affects the most vulnerable beneficiaries	Unknown: expected to be higher due to weekly monitoring and public display of records	Unknown	Unknown

Criteria	Decentralized Food Models				Centralized Models	
	AP Mothers Committees	MP Self Help Groups	Bihar Current AWW & AWC Only	Bihar Future Pilot Community Kitchens	Vendor	State Corporations
Degree of Corruption	Low: currently CARE/ICDS monitoring pilot; will not be replicated with scale-up	Low: because of multiple actors, e.g. SHG members.	High: reported 50% leakage due to multiple factors.	Unknown: ICDS control of kitchen does not provide protection of models owned by women	High	Unknown
Community Ownership	High	High	Low: committee is rubber stamp	Medium (expected)	Non-existent	Non-existent
Use of local resources	High (only with CARE model)	High	Low	Low-Medium (expected)	Non-existent	Non-existent
Social Capital for women	Good: Relationships and support from each other (group members). Relationships with AWCs, ICDS, CARE, RD, the GP and shops	Very Good: Relationships and support from each other (group members). Relationships with banks, AWCs, ICDS, CARE, RD, the GP and shops	Poor: everything done by AWW	Good (expected) involvement of SHGs and institutions such as WDC and MS.	Nil	Nil
Economic capital for women	Good: Women earning high incomes and high individual savings but very low collective savings or credit linkages to absorb shocks	Good but diminished: Women did earn high incomes which have decreased over time because of ICDS policies. High collective savings and bank linkages.	Nil	Poor (expected): women working in community kitchen will be paid as staff, and salaries not high.	Nil	Nil
Political capital for women	Medium: as relationships have developed with the Gram Panchayat and issues are being raised by women in the Gram Sabha	Medium: as relationships have developed with the Gram Panchayat and issues are being raised by women in the Gram Sabha	Poor: GP is involved marginally	Unknown	Unknown	Unknown

Criteria	Decentralized Food Models				Centralized Models	
	AP Mothers Committees	MP Self Help Groups	Bihar Current AWW & AWC Only	Bihar Future Pilot Community Kitchens	Vendor	State Corporations
Convergence	Low	High: with SGSY and PDS but not Women's Programs	Low	Medium: (expected with Women's Programs but not with PR&RD or PDS)	Nil	Nil
Monitoring	Very Good: However, dependent on CARE	Data collection by ICDS good, but data rarely used.	Very Poor: Neither transparent nor accurate	Unknown	Unknown	Unknown
Expected long term sustainability	Low: ability to absorb shocks given lack of financial savings/cushion and lack of entrepreneurial skills.	High: Generally robust and comprehensive skills for managing micro-enterprise, as well as financial resources and social capital.	High: if corruption and leakage is tolerated.	Low to Medium: Will not have entrepreneurial incentives or spill-over benefits.	N.A.: Due to Supreme Court rulings to decentralize they are to be phased out.	N.A.: Their current role seems to contradict Supreme Court ruling.
Scale-up or Replication	Expensive: due to heavy demand on ICDS resources	Medium Cost: sharing between ICDS, RD, FCI and SHGs	Low Cost: more than offset by large losses due to leakages	Expensive: heavy demand on ICDS resources with not enough convergence	N.A.	N.A.

Exhibit 2: Financial Profile of Average DFM Sites in MP and AP

This Financial Profile pulls together comparative data from Tables 1, 3, and 14. It uses the most recent (2006-2007) financial data for the assessed DFM Sites. Explanatory notes are provided on the following page.

	<u>M.P.</u>	<u>A.P.</u>
1. Number of DFM Sites Assessed.....	6	2
2. Average Number of AWCs per DFM.....	46	43
3. AWCs served by these DFM Sites.....	276	86
4. Feedings per Day per AWC.....	51	64
5. Feedings per Day per DFM.....	2,346	2,752
6. Feedings per year per DFM.....	703,800	825,600
7. Annual Revenue from ICDS	1,163,230	1,468,182
8. Other Revenue.....	<u>62,068</u>	<u>4,330</u>
9. Total Annual Revenue	1,225,287	1,472,512
10. Cost of Ingredients	985,729	1,161,740
11. Other Operating Costs	<u>113,453</u>	<u>48,681</u>
12. Total Annual Costs	1,099,182	1,210,421
13. Average Gross Margin per Group	126,105	262,091
14. Number of Women in Typical Group.....	10	10
15. Gross Margin, per woman, per month	1,050	2,184
16. DFM Revenue from ICDS per Feeding	1.65	1.77
17. DFM Cost per Feeding.....	1.56	1.47
18. Operating Margin, per Feeding.....	0.09	0.30

NOTE: The Gross Margin provides the resources necessary to compensate DFM Group Members for their labor, and for the risk to their investment. It also must enable them to save for eventual replacement of their machinery. The Gross Margin is almost entirely determined by factors beyond their control: the costs of ingredients, transport, etc., and the price ICDS agrees to pay them per participant fed, or per kilogram.

Gross Margin per woman per month ranged from a healthy Rs. 2,184 in AP to only Rs. 1,050 in MP, even including their non-ICDS income. Any ICDS policy decisions, such as required recipe changes, that increase DFM costs must be carefully analyzed, and accompanied by adequate adjustments in the price paid by ICDS, or these vulnerable enterprises may go bankrupt and fail, causing great damage to both the societal and nutritional goals of the program.

The 2006-07 cost figures here reflect the shift in MP to a more expensive wheat/lentil recipe, but NOT the impact of impending cost increases due to recent policy decisions, notably the 6-recipe-per-week requirement.

Explanatory notes, by line, on Exhibit 2: Financial Profile of Average DFM Sites in MP and AP::

- 1 Bihar is not included, since the model there did not involve groups working as an “enterprise.”
2. From Table 3.
3. From Table 3.
4. From Table 1. In MP, the 3–6-year-old group has been taken from the DFM Sites and given to a state food corporation, reducing the average daily participants from 82 to 51 per AWC.
5. Line 3 x Line 4.
6. Line 5 x 12 months x 25 days/month.
7. From Table 14.
8. From Table 14.
9. From Table 14.
10. From Table 14.
11. From Table 14.
12. From Table 14.
13. Line 9 - Line 12.
14. From Report Sections II.A. and II.B.
15. Line 13 / Line 14.
16. Line 7 / Line 6.
17. Line 12 / Line 6.
18. Line 16 - Line 17.

Figure 1: Key Programmatic Areas for ICDS Convergence in DFMs

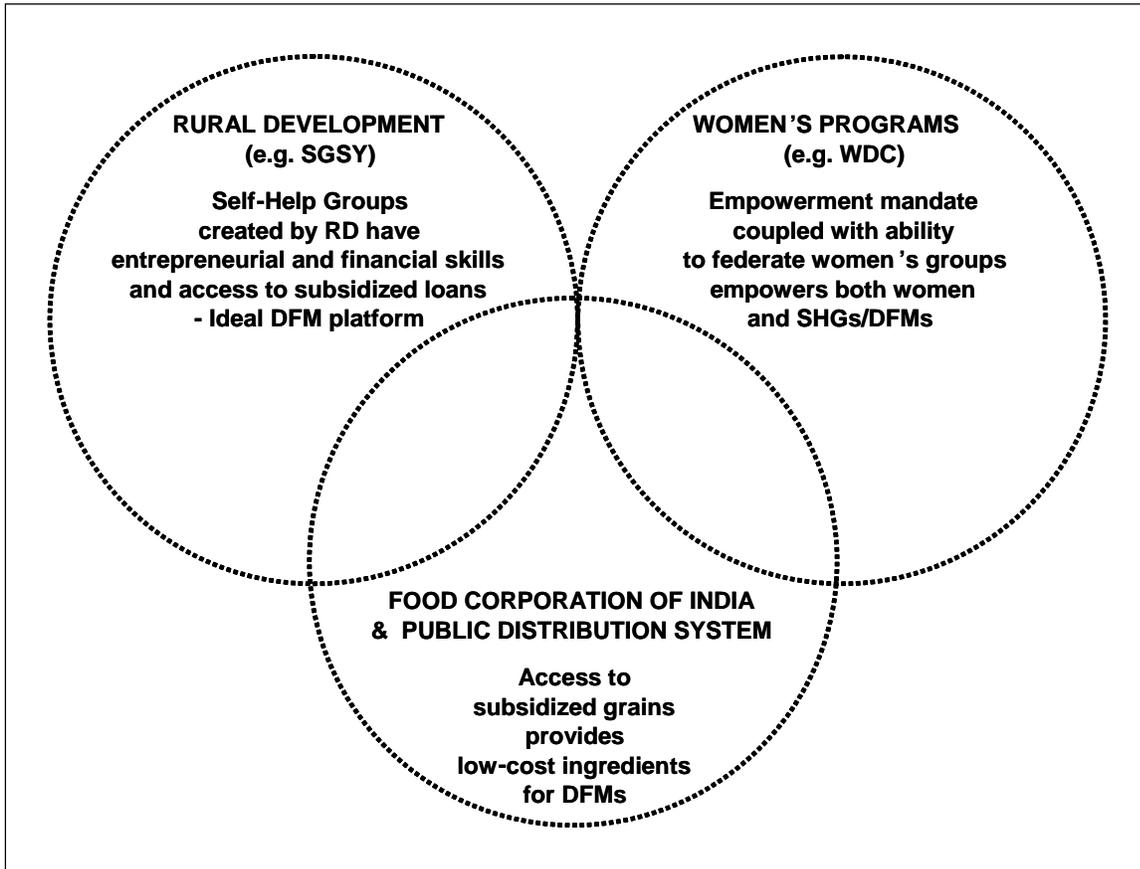


Figure 2: Map of India



**Field Sites
For Assessment Of
Decentralized Food Models
in India's ICDS Program
April-May 2007**

- Andhra Pradesh
 - Bihar
- Madhya Pradesh

1. INTRODUCTION & BACKGROUND

India's population is approximately 1.1 billion, with a growth rate of 1.38%, a total fertility rate (TFR) of 2.68 children born per woman, an infant mortality rate (IMR) of 57 deaths per 1,000 live births, and a life expectancy of 64.71 years. Despite large stocks of grain and the recent rapid economic growth, the prevalence of moderate or severe underweight among children below age 3 only declined from 47% in 1998 to 46% in 2006. The persistently high level of child malnutrition is a consequence of infectious diseases⁷, feeding practices, poor nutritional status of pregnant women and the inability of a significant portion of the population to access adequate food. To address these factors, the GOI has developed several major programs to increase access to food: 1) price controls, e.g. the Public Distribution System (PDS) and Fair Price Shops; 2) National Rural Employment Guarantee Scheme (food-for-work programs); and, 3) supplementary feeding programs (CIA 2007; Das Gupta et al 2005). The largest supplementary feeding programs are the Integrated Child Development Services (ICDS) SNP program and the Mid-day Meal program for school children.

Traditionally, India's large-scale supplementary feeding programs have followed a "centralized" model, where the food to be distributed at the grass-roots level is procured from national or state-level institutions, which do any necessary preparation and distribute the food to the community level. Recently, in several Indian states, there have been highly interesting experiments with "decentralized" food models (DFMs), some of which are described in detail in the present document. In a typical decentralized model, the process of food procurement, processing, and distribution is carried out at the local level, usually by a group of women acting as an "enterprise". Many variations of this concept have been tried, with varying results – in Bihar, for example, rather than a group of women, each individual AWW receives a monthly sum, and is responsible for buying food in the market, which is cooked and served in the AWC by her helper. The DFM approach has been seen to have such potential benefits that several states are now "scaling up" to deploy DFMs state-wide.

1.1. The Integrated Child Development Services (ICDS)

The ICDS program operates under the Ministry of Women and Child Development (MOWCD) and has five main objectives:

- Improve the nutritional and health status of children below the age of six years, pregnant women, lactating mothers, and adolescent girls
- Lay the foundations for proper psychological, physical, and social development of the child
- Reduce the incidence of mortality, morbidity, malnutrition, and school dropout
- Achieve effective coordination of policy and implementation among various departments to promote child development
- Enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper health and nutrition education (DWCD 2004).

⁷ Infectious diseases make children more vulnerable to malnutrition, which, in a vicious cycle, makes them more vulnerable to infectious diseases,

While ICDS addresses all of these areas, mainly through its extensive network of community-level Anganwadi Centers, the primary emphasis has been on its Supplementary Nutrition Program. Since its beginning in 1975, ICDS has grown to be the largest food supplementation program of its kind in the world, although the approach has not been found to be effective to date in reducing malnutrition. World Bank researchers, using data from the National Family Health Surveys (NFHS) in 1992/93 and 1998/99 (including anthropometric measures), found little evidence that the ICDS program had had an impact on child nutritional status⁸. According to the analysts, a primary explanation for this was that the program offered less coverage in poorer states. ICDS program coverage was particularly high in the southern region, the north eastern region, and the non-poor states of the northern region. In the poor states of the northern region, with well over 40% of India's population, over half the children below 3 were moderately or severely underweight, and ICDS program coverage was very low. The northern states also received the lowest budgetary allocations in the country. Program placement was similarly regressive across villages in the country as a whole; while 80% of the villages with highest socio-economic status had ICDS coverage in 1998, only half of the villages in the lowest two deciles had coverage (Das Gupta et al 2005). At least in theory, universalization (the mandated expansion of ICDS to cover the whole country) should ensure that program placement is not skewed away from the very poor.

It is not only the research community that is concerned about the ICDS impact on nutritional status. As recently as January, 2007, Indian Prime Minister Manmohan Singh warned that malnutrition rates for children in his country remain among the highest in the world. In a strongly-worded letter sent to state chief ministers, Prime Minister Singh said that that the country's Integrated Child Development Services (ICDS) scheme had been "poorly implemented", and had not sufficiently dented child malnourishment levels. "There is strong evidence that the programme has not led to any substantial improvement in the nutritional status of children under six," the Prime Minister said, urging strong action.

There are several additional explanations for the SNP's apparent lack of impact on childhood malnutrition. Increasing exclusive breastfeeding through 6 months of age, improving complementary feeding after 6 months, and improving nutritional status for P&L mothers are likely to reduce childhood malnutrition by reducing the number of low-birth-weight babies and ensuring proper nutrition during the most nutritionally vulnerable period of a child's life. But THRs intended for P&L women and children under 3 years of age may substitute for other food within the household, or simply become part of the entire household's food supply. Spot-feeding of the 3- to 6-year-olds at the AWC received much attention from stakeholders during our assessment interviews, partly because it is seen as a strong attraction to bring children into the AWC. While the appeal of spot-feeding may be useful in attracting children to the AWCs for other services and it may augment their nutrition, spot-feeding does not address malnutrition at the most critical time in a child's life cycle: gestation and the first 2 years of life. Health education and behavior change communication (BCC) are essential elements of a strategy to reduce malnutrition, but where the inability of a significant portion of the population to access adequate food has been identified as a major cause of malnutrition, food must also be made available.

⁸ While specific forms of supplementation (e.g. iodized salt and Vitamin A) offer sufficient examples of program success, broader efforts to improve child nutrition through food supplementation have shown much more limited successes outside of controlled trials (Gillespie and Haddad 2001).

Although it is not clear that the monotony of the food provided is a problem in terms of the SNP's impact on malnutrition, some stakeholders cite this as a reason for the apparent lack of impact ICDS has had on childhood malnutrition. ICDS has become known as the "Porridge Department" of the GOI, a label the Department would like to rid itself of, along with the criticism of its apparent lack of effectiveness in addressing childhood malnutrition in India. However, the impact of an unvaried diet on the acceptability/attractiveness of the SNP has not been carefully studied, and much of the thinking and nascent policies about varying the SNP menu tend to consider only the spot-feeding within the AWC. In addition to varying the menu, individual states are beginning to consider or experiment with supplementation that will incorporate more micro-nutrients, such as "sprinkles" or fortified candies.

As an innovation that addresses some (but certainly not all) of the issues in the ICDS SNP, Decentralized Food Models (DFMs) are seen as offering potential advantages over existing contractor/vendor-based SNP models: community involvement, fresh local food, avoiding a protracted supply chain that is often disrupted through bureaucracy and corruption, and providing other benefits to those responsible for preparing and providing the food, most notably economic self-sufficiency.

1.2. Swarnjayanti Gram Swarozgar Yojana and Similar Programs

An order issued by the Supreme Court of India in July of 2004, based on public-interest litigation filed by a civil-society organization, recognized the benefits of DFMs and stated that "contractors shall not be used for supply of supplementary food in AWCs and preferably ICDS funds shall be spent by making use of village communities, SHGs and *mahila mandals*⁹ for buying of grains and preparation of meals." This order from the Supreme Court can be seen, in most state contexts, as calling for convergence of the ICDS program and others such as the *Swarnjayanti Gram Swarozgar Yojana*¹⁰ (SGSY) which operates under the Panchayati Raj and Rural Development Department (PR&RD). SGSY is given as an example here because of the role it has played with the DFMs in MP, but convergence could also be with equivalents of the SGSY program, such as the World Bank-supported *Indira Kranti Patham* (IKP) program¹¹ in AP.

In 1999 the GOI restructured the various rural training, development and employment programs¹² to launch SGSY, which focuses on grassroots social mobilization to support SHGs and self-employment for vulnerable populations. The objective of SGSY is to help those below the poverty line by encouraging them to form small groups and apply to banks for credit and for government subsidies. A group is normally deemed to have been formed when about a dozen of the poorest families join together and open a joint account in a local bank to deposit their regular monthly savings. They elect two of their group to operate the account. The Indian Government transfers an amount of Rs. 10,000 (around \$250) into the account. For the next 6 months, the

⁹ The *mahila mandal* has been in existence for decades and is an organization found throughout India. It was formed during the 1950s under the Community Development Programme and strengthened again during the Indira Gandhi administration with the idea of facilitating the involvement of women in the economic life of rural India. The aim is to: "draw rural women into the mainstream of development and to enable them to function as instruments of social change by providing them with programs in which they will have a stake or a sustained interest such as improving their income or productivity and employability or employment" ..

¹⁰ Golden Jubilee Rural Employment Scheme

¹¹ This program was previously called Velugu.

¹² Earlier programs included IRDP, TRYSEM, DWCRA, SITRA, GKY and MWS.

group members may use this money for small loans. After the account has been run successfully for 6 months, and if the bank considers the group to be credit-worthy, then the bank itself allows the members of the group a credit limit of RS. 20,000.

There is then a further 6-month period, during which the members use credits to perform urgent small jobs. After this period, the group agrees on a business idea and presents a project proposal. If the proposal is accepted, the group is then given a Rs. 100,000 subsidy, plus a Rs. 100,000 loan, to establish the business. Group members market their produce collectively. District technical institutions plan, implement, and monitor SGSY activities with the support and involvement of *panchayati raj* institutions (PRIs) and the District Rural Development Agency (DRDA). Commercial, regional, and co-operative banks provide credit to SHGs, and SGSY supports SHGs to engage in income generation and identify markets for SHG-processed products.

Clearly, if SHG-processed food products meet the calorie and protein requirements of the ICDS,¹³ such products could provide SHGs with a ready-made market in the form of AWCs in their geographically contracted area. Given the Supreme Court ruling, the idea of supporting SHGs so that they could process and provide supplementary food to the AWCs seemed an ideal income generation idea for SGSY and the SHGs it was supporting, and an appealing solution to some of the food supply-chain problems that ICDS was experiencing in managing the supplementary feeding program effectively.

The Supreme Court ruling did not limit the possibility of DFMs to SHGs. Other community organizations, including ICDS Mothers Committees, were also possibilities, but given the income generation possibilities and the potential for convergence between ICDS and SGSY, SHGs seemed a particularly appealing format for the creation of DFMs that offered a product and service to support ICDS as well as a micro-enterprise concept that SGSY (or other programs like SGSY) could fruitfully support.

1.3. CARE and the USAID Title II Food Aid Program

CARE began distributing PL 480 food in India in 1950. Since the inception of ICDS in 1975, CARE has supported its supplemental feeding component with USAID-provided PL 480 Title II food commodities, and its current role in the ICDS SNP (as well as the SNP itself) is rooted in Title II. In India, the Title II program peaked at \$1.5 billion in 1960 and gradually declined through the 70s and 80s. In the mid 90s, when the program's value had declined to under \$80 million, it became, like other USAID programs, more results-oriented. CARE's USAID-funded Integrated Nutrition and Health Project (INHP) was launched in October 1996 and continued with INHP II, which began in 2001 and operated in 78 districts in 9 Indian states. In 2003 CARE combined INHP II with a USAID-funded reproductive Health and HIV/AIDS program to form the Reproductive and Child Health, Nutrition and HIV/AIDS (RACHNA) Program. In 2002, the Genetic Engineering Approval Committee (GEAC) of GOI disallowed the import of the Title II corn-soy blend (CSB), and CARE/USAID permanently suspended importation of CSB from the US. This change led to the transition of grain supply to state governments in CARE-assisted areas in all nine CARE program states. The state governments had already been

¹³ Fortification with micronutrients is now being considered as a requirement, but the implications are as yet unclear. This is discussed later in the report.

providing food to ICDS programs in non-CARE-assisted ICDS areas. During these years, CARE transitioned to reduced direct provision of food rations and a strong focus on technical and operational support to ICDS and other relevant state departments. Over the years, CARE's role with the SNP had given it significant credibility within the government system, and that credibility was a platform that CARE could build on.

As part of the Title II phase-out process, which will conclude in 2009 and is taking place under INHP III (01/2007–12/2009), CARE is assisting ICDS to replicate and sustain key approaches developed with Title II and other USAID support. Beginning around 2000, CARE has been engaged in the development and demonstration of DFMs and has experimented with various partnerships to implement them. The final evaluation of INHP II recommended that decisions about scaling up the DFM “be based on a detailed analysis of the full costs (both direct and indirect) [of the model]...and a better understanding of what would happen to the ability of the ICDS to deliver its core program if it assumes the workload for this model once scaled up.”¹⁴

1.4. The Food Corporation of India and the Public Distribution System

The Food Corporation of India (FCI), under the Federal Ministry of Agriculture, and the related state-level Public Distribution System (PDS), would also seem to be ideal opportunities for ICDS convergence. The GOI and state governments provide various subsidies for food that are channeled through the FCI and the PDS — the most relevant for the DFM are the subsidized prices potentially available through the PDS Fair Price Shops (FPS).

However, only one of the three states visited for this assessment was taking advantage of these subsidies through the FPS, and this was only for the wheat purchased by DFM Groups in MP. The respective state governments have to approach the MOWCD to draw grain from FCI, and the MOWCD obtains approval from the FCI's “nodal” Ministry of Agriculture. In MP, the government has further decentralized the procurement by the DFMs from the FPSs. DFM purchases through the PDS seemed to be working well, but this procurement option was available to the DFMs only because of a special arrangement within MP. ICDS has a Wheat-based Nutrition Programme under which a special arrangement was made to provide wheat to the DFMs in the wheat-eating states, however the state governments have to request as explained above. The amount of wheat to be allocated is agreed upon between the MOWCD and FCI's nodal Ministry at the national level. Based on this approval, Madhya Pradesh Civil Supplies Corporation then has to get approval from WCD in MP to lift the stock from the FCI warehouse for distribution on a quarterly basis. This process ensures that the DFMs get wheat at a subsidized rate from FCI through the Civil Supplies Corporation. There is a parallel Rice-based Nutrition Programme which can be utilized in the rice eating states under ICDS.

In AP, the DFMs were unable to access the PDS and obtain subsidized prices apparently because no mechanism had yet been developed for dealing with the FPSs. The FPS could sell to their own designated individuals or households, but not to the DFMs. If a DFM was scaled-up in AP, this expansion would presumably encourage the development of the kind of arrangement that has already been established in MP.

¹⁴ As quoted in Scope of Work (Annex 5). Final evaluation of CARE/India's RACHNA program included evaluation of INHP II.

In Bihar, stakeholders reported that the DFMs were not using the PDS because of the poor quality of the products available there. Access did not seem to be an issue, and poor quality — impurities in the *dal* and large-grained rice (difficult to cook) — was consistently given as the major reason for not using the PDS.

Market prices can be significantly above those offered by the PDS, and using the open market (especially in the context of the Bihar DFM) also facilitates corruption when the DFM is basically a cost-reimbursement model, and there is no dependable way of verifying what price the AWW actually paid for the ingredients she has purchased on the open market.

There is also potential for corruption within the PDS that has an impact on the DFMs. In MP, DFM Groups can purchase a 100-kilogram bag of wheat from the PDS that may only contain 95 kilos of wheat. Apparently, even when the women running the DFM know they are being short-changed, they may be forced to take a bag that is not packed with the proper quantity because they have little recourse. This “loss” is sometimes described as a “processing loss” and is categorized as that type of loss in the section of this report on financial viability. Like other forms of corruption, the magnitude of this problem cannot be verified, but our qualitative data suggested that this was at most a minor problem in MP.

1.5. Other Government Departments

Both for the SNP and for its other programs, the ICDS scheme has collaborated with a number of other GOI ministries and departments or programs. These include the Ministries and/or Departments of Health and Family Welfare, Education, Agriculture as well as women’s organizations, such as the Women’s Development Corporation (WDC) and Mahila Samakya Bihar (MSB).

ICDS’s programmatic mandate includes both health and education (while ICDS officials in MP talked of turning the AWCs into community health centers, ICDS officials in Bihar talked of the AWCs being little schools). However, for purposes of sustaining the DFMs, it will be particularly important for ICDS to collaborate with women’s organizations. Over the long term, the DFM Groups need to work and speak through federations and other mechanisms so that they can inform and influence policy debate over policies that will influence them. This will help to avoid the type of state-induced policy shocks experienced by DFMs in MP. It will also have an impact on the empowerment and status of women, which — as discussed at the end of this section — should be a key strategy in the attempt to reduce malnutrition.

1.6. Assessment Methodology

A variety of data sources — documents, individual and group interviews, focus group discussions, direct observation, quantitative data analysis of financial data — were used for this assessment of DFMs to ensure a broad perspective in the descriptive synthesis and data analysis.

The protocols and tools designed for the study prior to the fieldwork are included in Annex 4, and they are based on the scope of work (SOW) which is included in Annex 5. The study protocols were shared and discussed with staff at CARE and USAID while the assessment team was in Delhi, just prior to the fieldwork. Although the initial fieldwork allowed for a more pragmatic

emphasis on the most critical issues (as other issues anticipated in the protocols were appropriately relegated to a lesser or insignificant position based on our early findings), the basic line of inquiry in the protocols required no revision. This was particularly true of the qualitative questions. For the financial data, we obtained very detailed and robust data for the small sample of DFMs that we were able to study, but the financial data available from both CARE and ICDS were more limited for a variety of reasons that we had anticipated. (Given the uncertainty about what type of DFM might be replicated or scaled-up in different states, this limitation is not a particular concern within the context of this assessment. We hope our analysis will inform DFM replication and scale-up plans in a manner that ensures the financial burden on ICDS is minimized and the financial viability of the DFMs is better assured.)

Site visits were initially planned for three states: AP, MP, and Orissa. However, based on a strong recommendation from ICDS/ MOWCD in Delhi, we added Bihar to the assessment, which required eliminating Orissa given the study's time limitations. Within these three states, field sites were purposively selected to give adequate representation of the various DFM "typologies" as identified in the study Protocol, and taking into account availability of transport and local CARE and government personnel. In MP, where the DFM has been scaled up state-wide, we visited and analyzed 6 DFM Sites, and in AP and Bihar we visited 2 DFM sites each, for a total of 10 sites where activities were observed, stakeholders interviewed, and data collected. We also held discussions and gathered data from program officials and other stakeholders at state, district, and block levels in each state.

MP was an essential part of the study because the DFM had been scaled up across the entire state. DFMs that had been started by CARE with funding from the Canadian International Development Agency (CIDA) had been operating for up to eight years. There were also DFMs started by CARE with USAID funding under INHP. The WFP has established a larger DFM as a cooperative. Working with and assessing these various models, ICDS had converged with SGSY to roll out the DFM throughout MP. Therefore, MP offered both scale and scope in terms of a variety of DFMs supported directly and indirectly by different agencies.

AP and Bihar offered important comparisons and contrasts with MP. In AP, CARE had piloted a different version of the DFM, and it was seen as a useful contrast for the assessment team to study. In Bihar, a simpler model had been designed and implemented largely by ICDS with minimal external assistance, and the lessons learned from that experience were being incorporated into plans for another DFM that was on the verge of being piloted.

Over 100 individuals were contacted during the assessment. They represented grassroots stakeholders working directly as part of a DFM, the district-, block-, state-, and national-level ICDS officials working in AP, Bihar, MP, and New Delhi, CARE district, state and central personnel, and staff working with the Micronutrients Initiative, the WFP, the World Bank and USAID, most of whom are based in Delhi. The questions posed during interviews and focus-group discussions and as part of our review of documents included those listed in Annex 4. Many questions were deliberately open-ended, which allowed further exploration and a more nuanced analysis. Often we simply began an interview by asking participants to explain the DFM to us, how it functioned, and what benefits or drawbacks the model presented. Group interviews

and focus-group discussions with the members of a DFM generally lasted about three hours, and interviews with individual ICDS staff members generally lasted an hour to an hour and a half.

The financial data collected on the DFMs included a review of all transactions and records over a three-year period (with the exception of one DFM that was just over a year old). This report includes the data from the 6 DFM Sites in MP and the 2 in AP — there were no comparable useful financial data in Bihar, for the reasons described in Section 2. We obtained three years worth of data for 7 Groups, and one year of data from the most recently formed Group, which collectively provided us with 22 sets of detailed annual financial records. The data collection process generally took a full day for each DFM. These data were entered into Excel spreadsheets, which were later used to sort, aggregate and graph data as part of our analysis of financial feasibility.

The team received dozens of documents, a few PowerPoint Presentations, and one film. The majority of these materials were provided in advance of the field work, and all of the print and multi-media materials reviewed are listed in Annex 2. These provided background contextual information, and helped to inform our analysis by reinforcing or adding a new dimension to original data we collected in the field.

In addition to our own direct data collection and analysis, we benefited from the reactions of those who participated in our final debriefings and presentations in Delhi, both at USAID and at ICDS. While these reactions did not change the basic findings, they were very valuable in allowing us to put lesser or greater emphasis on some aspects of the assessment, given the needs and interests of those we understand will be the primary audience for this document: ICDS.

1.7. Situating this Assessment in Context

It is beyond the scope of this assessment — which focuses on DFMs as a vehicle for preparing and delivering various food commodities to the AWCs, i.e. as a decentralized food commodity supply system alternative to the centralized vendor-based system — to assess or suggest changes that would make the SNP more effective in its impact on childhood malnutrition. Nevertheless, in order to put this more specific assessment into context for readers, it would be remiss not to summarize some of the central points that have been made in previous studies about the causes of childhood malnutrition in India and the programmatic strategies suggested by these studies.

Childhood malnutrition rates in South Asia, and particularly India, are nearly double those of Sub-Saharan Africa, a phenomenon that has been referred to as the *Asian Enigma*. This phenomenon has been attributed to three critical differences between Sub-Saharan Africa and South Asia, two of which are linked to women as SNP program participants and the status or empowerment of women: First, over 30% of babies in India are born with low birth-weight — this single largest predictor of childhood malnutrition highlights the need for better nutrition of pregnant women;¹⁵ Second, the status or empowerment of women is lower in India, limiting their ability to access resources for their own and their children's health and nutrition — this lack of empowerment is associated with both low birth weight and poor child feeding (including ade-

¹⁵ This implies both better nutrition for women who are known to be pregnant and better nutrition of women of child-bearing age, since pregnancy cannot be predicted in advance and the state is frequently not identified with certainty until a woman is well into the first trimester.

quate breastfeeding) during the first 12 months of life. The third critical difference, which has more limited relevance to this assessment, is that hygiene and sanitation standards in South Asia are well below those of Sub-Saharan Africa (Ramalingaswami et al 1996).

ICDS services have been described as ranging from “indifferent to dismal in large parts of the country” (Ahmed 2005). Various reports have pointed out that ICDS has put priority on food supplementation, rather than health awareness and BCC), and — more relevant to the current assessment — that ICDS has focused too much on spot-feeding the 3- to 6-year-olds in the AWCs and not enough on support to P&L and children under 3 (Ahmed 2005; Gragnolati et al 2005; Right to Food Campaign 2007). Malnutrition begins during pregnancy (as evidenced by the fact that more than 30% of India’s babies are born with low birth weight) and/or during the first two years of life, when lactation should be exclusive for the first 6 months and continue beyond that as complementary foods are introduced. By the age of two most growth retardation has taken place and will not be reversed, so the period of pregnancy and the first two years of life represent the most critical “window of opportunity” for nutrition investments. In addition to these issues related to its priority target groups, ICDS faces substantial operational challenges, including inadequately skilled workers with inadequate incentives, poor or non-existent supervision with weak program monitoring and evaluation, corruption, and lack of political and administrative will and commitment. Indeed, the Supreme Court orders related to the SNP are largely perceived to be the result of civil society agitation about the rights of citizens to respond to the inadequacy of services (ibid).

The recent World Bank discussion paper, “India’s Undernourished Children: A Call for Reform and Action,” which prominently refers to *The Asian Enigma*, concludes its executive summary with the following sentence intended to recommend better priorities for ICDS: “The focus should be on those ICDS components that directly address the most important causes of undernutrition in India, specifically improving mothers’ feeding and caring behavior, improving household water and sanitation, strengthening referral to the health system and providing micronutrients.” (Gragnolati et al 2005) While these recommendations are sound, they focus primarily on the child and how the mother feeds and cares for the child, and not specifically on addressing the nutritional needs of the pregnant or lactating woman herself or on improving the status and empowerment that she (and other women) have in the community and the society at large. The factors identified as key to explaining the “Asian Enigma,” coupled with the fact that the ICDS program operates under the purview of Women and Child Development, suggest that priority areas for ICDS should include a focus on P&L women and a focus on women’s empowerment and status.

It is within this context that we have considered the DFMs and their role in achieving ICDS objectives.

2. DESCRIPTION OF DECENTRALIZED FOOD MODELS

Prior to beginning our field work, the assessment team anticipated that different typologies of DFMs would be analyzed in the different states we planned to visit, and our preliminary typologies were based on which organization (i.e. CARE or ICDS) was primarily responsible for establishing the DFMs, the degree of initial support DFMs had received, the sources for their raw commodities (i.e. market versus PDS), etc. However, once our field work was underway, it became clear that the typology criteria identified in the abstract had little relevance in terms of distinguishing features of the DFMs that were worth analyzing.

Naturally, differences in the effectiveness of a DFM Group will be strongly affected by the individuals who make it up, and by its length of experience. Aside from these factors, the most basic differences among the models were a function of which state they were located in. The approaches in MP, AP, and Bihar differed considerably from each other because ICDS (sometimes supported by CARE) had a different perspective and strategy in each of the states.

Women were involved in varying degrees in all the DFMs we visited. At the grassroots level, the central players in the DFMs are the women who have created the SHGs that became DFM groups in MP, and the women who were members of the Mothers Committee that established DFMs in AP. The AWWs are always a critical link between the DFM group and ICDS, and in Bihar these AWWs essentially are the DFM “Group”, as they buy and make the food with the assistance of their helpers. The roles of the AWW and other actors (as well as their perspectives on the DFMs) are summarized at the end of this section, following the description of the different DFMs in the three states.

2.1. DFMs in Madhya Pradesh

2.1.1. General Situation

Because the grassroots nature of the DFM is a key characteristic of the model, the assessment team began its field research at that level, meeting with the women’s SHGs that had become DFM Groups in MP. From this grassroots level, we continued our field work, meeting with block- and district-level government staff (primarily from ICDS) and then more senior state-level staff who had been responsible for overall policy formulation and/or state-level operational decisions. At the state-level, we also met with representatives of civil society, primarily women’s groups leaders.

MP has more DFM Sites than any other state, as the DFM has been scaled up across the entire state. Selected existing SHGs, originally formed under SGSY, supply the AWC with fresh locally processed food. The AWW currently uses this food for spot-feeding the 3- to 6- year-olds who attend the AWC, as well as THR for P&L women and adolescent girls. Prior to a recent policy decision taken by ICDS at the state level, the DFM Groups also supplied the AWC with the THR for children aged 6 months to 3 years. This *panjeeri* (weaning food) is now being supplied by Madhya Pradesh State Agro Industries Corporation, an ICDS policy that reduced the amount of food supplied to the AWCs by the DFMs.

CARE originally developed some DFM Sites with funding from CIDA, and then developed additional sites with USAID funding. These original DFMs were formed with the help of the AWC workers. Following patterns established by CARE with these early pilot DFMs, ICDS and PR&RD converged to roll out the DFM across the state.¹⁶ Although improvements could be suggested, there has been significant convergence between ICDS and PR&RD at all levels of the state in order to support the development of DFMs through existing SGSY SHGs. Additional convergence has also been established with the Public Distribution System (PDS), which has allowed the DFM Groups to access wheat at subsidized rates.

The SHGs have a track record of savings and credit, as most were pre-existing groups formed under the SGSY, which inculcates the practice of thrift and credit along with the basic training on SHG and micro-enterprise concepts. Under the SGSY scheme, these DFM Groups have access to bank credit which, supplemented by their savings, can serve as a buffer to absorb shocks, as well as a resource for investment or working capital. In focus group discussions, women reported taking initial loans that ranged from Rs. 80,000 to 100,000, complemented by an equivalent government subsidy amount. Processing requires some capital investment in the form of machinery for grinding, roasting and packaging. The loan and subsidy together helped finance the machinery, infrastructure, initial investment in raw materials, and other working capital needs. For scale-up, capacity building was provided by ICDS and SGSY, based on materials developed by CARE, to help women learn to operate the machinery, maintain it, and handle food, etc.¹⁷

2.1.2. Comparative Features of the Madhya Pradesh Model

- a. *Typology*: SHG-operated DFMs supported by CARE or by the Government. (Among CARE-supported DFMs, some groups in Hoshangabad district received more intensive support under an earlier project supported by CIDA.)
- b. *Players*: SHGs formed under SGSY constitute the DFMs. After delivery to AWCs, AW helpers cook the food for spot-feeding and distribute it in the form of THRs. ICDS and SGSY staff, as well as the PDS, are all involved in initiating the DFMs, training and capacity building, and/or in monitoring.
- c. *Current Membership of the DFMs*: Membership consists of 10 women on average; most members are identified from BPL families and many SHGs have members belonging to the scheduled caste or tribe populations, sometimes as the majority.
- d. *Founding & Initial Operations*: The first set of groups was started in 1998 in Hoshangabad district by as a pilot. In 2001, during the scaling-up phase, the remaining groups were formed by the PR&RD under the SGSY program. The groups included many women from BPL families. All groups started with savings and credit. Initiating savings among the very poor is not always easy. In Bainganga Swayam Sahayatha Sangha, Keolari block in Seoni district, the women who had established the SHG that eventually became a DFM Group, said they

¹⁶ ICDS apparently also considered the WFP DFM in MP for possible scale-up; this model was apparently rejected because of the higher capital costs invested in equipment and machinery. The cost-benefit of the greater investment in equipment does not appear to have been carefully analyzed.

¹⁷ See also "Self Help is Best Help" in Annex 3 for a vivid description of the impact of participating in a DFM Group from the perspective of a SHG in MP

did not know how to save when SGSY first approached them. Each woman saved a handful of grain daily, and at the end of the month they collected all the grain and sold it. They found this allowed them to save about Rs. 20 per month. Only through such regular savings were groups able to qualify for their first bank loans.

SHGs were graded by SGSY and the banks based on their abilities to manage a bank account with a small amount of the Group's savings, and then provided initial credit of about Rs. 25,000. This allowed SGSY and the banks to assess how they would manage a revolving fund. Six months later, they were graded again, according to their management of the revolving fund. Based on the results of this second round, the groups were linked to banks for bank loans. CARE chose some of these groups to link to the ICDS SNP and become DFMs during the pilot phase. During the scaling-up phase, pre-existing SHGs formed by SGSY were selected, based on how they were rated by SGSY, and were trained by ICDS and SGSY program officials in food processing and a variety of other skills needed to operate a DFM. CARE conducted a trainer of trainers programs for government officials to facilitate this training.

CARE initiated a federation of SHGs in Seoni district.¹⁸ It also attempted to do so in Hoshangabad, but with little success. The federation of Seoni district was active in negotiations with government officials. The federation member interviewed said that the federation had identified problems with several policy decisions, and had approached ICDS to change these policies, with varying degrees of success. ICDS staff said that district federations or individual SHGs had little success when approaching the ICDS state officials whose response was that they had not received any such complaints from other SHGs or from other districts.

- e. *Capacity-building*: SGSY provided the initial capacity-building, based on the SHG concept of savings and credit, and ensured that the group was strong enough to be linked to banks. ICDS and CARE provided training to some SHGs on management, hygiene, technical areas of food processing, and accounting. CARE directly trained groups that it had initiated. Government officials — ICDS and SGSY — provided similar training to groups they initiated using materials prepared by CARE. Some fledgling groups visited established DFM Sites in CARE program areas.
- f. *Initial and Current Economic Activities*: For some groups the DFM was their very first economic activity while other groups had already started small economic activities using their first loan of Rs. 25,000. The members managing the DFMs we interviewed were primarily involved in food processing for the AWCs, and, although other experiments had been undertaken (or were being undertaken) food processing had been the mainstay of their micro-enterprise activities.
- g. *Food Prepared*: Since their establishment the DFMs have prepared a powdered food that meets the established ICDS protein and calorie standards, mixing wheat with soy initially,

¹⁸ SHGs are networked into Federations in order to build a critical mass able to influence policies and access resources such as credit and government programs. Federations in India can be formed at various levels (village, cluster, block, district, etc.). At each higher level, federations represent a greater organizational capacity to negotiate with local authorities on decisions with wider impact. As certain decisions are taken at the state level, it is important that the federations become state-wide, to create a fully enabling environment for the members to exercise their rights.

and then shifting to wheat and *moong dal* (green gram lentils — scientific name *Vigna Radiata*). The porridge prepared out of the wheat and dal mixture has to be cooked before it is served. A new policy has recently been instituted in MP that requires the DFMs to provide six different recipes per week, chosen from among a larger set of acceptable recipes, in order to provide more variety to the participants. At the time of the assessment DFM Groups were being trained for this responsibility, which is analyzed in detail below in Section III, as it is expected to have great negative impact on the Group's financial viability.

- h. *Loans & Subsidies*: Under the initial CIDA project CARE provided the machinery, and the groups therefore primarily invested only in raw materials. For the SGSY groups (CARE and government assisted) after the initial Rs. 25,000 revolving loan, most groups were sanctioned for close to Rs. 200,000 in available funds, half of which was the subsidy component under SGSY and half of which was a bank loan. These loans were used to invest in machinery, infrastructure, and raw materials for food processing. In most cases the loans are being systematically paid off. Some groups have paid off their loans completely, while others, such as Bainganga Swayam Sahayatha Sangha, a government-assisted group, had paid off 70% of the Rs.100,000 loan. While all groups have bank accounts and savings, members of at least one group had started additional individual accounts with the post office. Another SHG, Bhaivalaxmi, had invested in accident insurance policies through a life insurance corporation.
- i. *Other forms of assistance*: All groups were assisted through SGSY loans and subsidies. In the CIDA project CARE provided machinery, uniforms, masks and pressure cookers. Groups that were established later purchased their own machinery with loans. DFMs in MP have access to subsidized wheat through the PDS.
- j. *Current Earnings & Savings*: Individual members in the DFM groups visited each earned from Rs. 1,500 to 2,800 per month during 2004 and 2005. Financial returns declined in 2006 because of the shift from soya to *moong dal* and because they were asked to supply a lower quantity of food since ICDS had decided to supply complementary food through the state corporation, Agro Industries. These changes reduced the monthly earnings of each DFM member by 450 to 750 rupees.
- k. *Performance of the DFM*: DFM performance was assessed in terms of: economic viability; technical considerations (e.g. overall perceptions of quality of food, food supply interruptions or lack thereof, the extent of corruption, and the burden on the AWC staff); and social and/or political effects of the program.
 - The DFMs initially had a strong economic base, as SHGs had access to credit and subsidies, and the income from DFM operations was good. DFM Members traced the decline in their incomes that had slowly eroded over the past three years, and they identified the causes of the decline as a direct result of ICDS policy deci-

sions. Members of Geeta group reported a decline in their monthly incomes from about Rs. 1,500 to 700¹⁹.

- The quality of the food delivered by SHGs, as reported by the AWWs, was said to be good, since the children liked the spot-feeding food that was made and served fresh at the AWC daily. Assessing the quality of the *panjeeri* (weaning food) provided by Agro Industries, one AWW said, “The children do not like the *panjeeri*. It spoils very quickly, often has insects and we usually end up giving much of it away to the community.” The *panjeeri* takes 15-20 days to reach the AWC, where it is stored for an additional 30 days; its shelf life is only 30 days in the rainy season. Other THR were not mentioned by the AWW.
- Interviews revealed that the DFMs provided a consistent supply of food even when the flow of funding from ICDS was not regular. They used their own savings and bank credit to ensure that there were no interruptions in food supply. DFM members also established an on-going relationship with shop keepers which allowed them to get materials on credit. The members demonstrated commitment to meeting deadlines by working through the night (the only time power was available during some periods of electrical “load-shedding”) to ensure the food got to the program participants on time.
- The MP model, as currently designed, minimizes corruption and maximizes transparency and efficient service delivery. The DFMs buy wheat at subsidized rates through the PDS, and payment to the DFMs is made by ICDS, based on the quantity of food delivered to and weighed at the AWCs. Once delivered to the AWC, there is significantly less likelihood of resale of the processed food, compared to whole grains and lentils. While the delivery by DFMs initially took place at the doorstep of the AWCs, the groups later negotiated that delivery be done at the block offices, and the payment made to the SHG at the district office in a single transaction for all deliveries. The decision to deliver to the block office was negotiated by the federation of SHGs in Seoni district in an effort to save costs, when the ICDS policy decision to switch from soya to *moong dal* as a basic ingredient was made. A second policy decision, which occurred at about the same time, was the shift to provision of *panjeeri* by Agro Industries. The economic viability of this model has steadily declined as a result of such policy changes made by ICDS at the state-level. The six-recipes-a-week policy that is currently being launched (mentioned above and discussed in the financial viability section) may be a death blow for the DFMs.
- Another potential problem identified by the AWWs and the DFMs is a planned ICDS policy whereby the AWW will be responsible for paying the DFMs directly. Under the new system the AWW would be the budget holder. The invoice will come with the delivery truck and the AWW will have to do a quality-

¹⁹ Figures in this section may differ slightly from those in the following section, because what stakeholders reported did not coincide exactly with the analysis of the financial records. However, any discrepancies are minor and do not change the conclusions.

assurance check to authorize payment. The AWW will then have to go to the office of the Child Development Project Officer (CDPO) to get money to pay the SHG. An AWW explained that she would have to go to the bank with the ICDS sector supervisor and the CDPO, and that a representative of the SHG would have to visit the AWC monthly to pick up their payment. This implies higher transaction and transportation costs for both the AWCs and the SHGs. Additional monitoring will also be required by the AWW, over and above the existing requirement of the AWW for the completion of 24 reporting forms each month. One AWW expressed concern that the new DFM-related responsibilities will mean more travel and increased paper work, and that will reduce the amount of time that she has for other ICDS activities and functions. Given the experience in Bihar, as discussed below, the new method of payment may also encourage leakage, while there are no obvious advantages to it.

l. *Monitoring and reporting:* Records are maintained by PDS and Agro Industries on the amounts of wheat released to each DFM through the PDS. DFMs are compensated based on the number of bags they deliver to the AWC where the bags are randomly selected to be weighed; records on each DFM are kept at AWCs and block offices. The AWCs report to the block offices and payment is released to DFM groups accordingly. The block and district offices have detailed records, by group, on the number of bags delivered, total weight, the total amount paid, etc. This information is fed up the system, from block-, to district-, to state-offices. The information does not appear to be used for analytical or decision-making purposes at any level.

m. *Impact:*

- SHG members are providing an essential service of supplying processed food to 20 to 100 AWCs. District and state stakeholders report that this process has been more effective and efficient under the DFMs than when private vendors perform it. Children attending the AWCs get regular hot, freshly prepared food in the form of *daliya* (porridge). The fresh food served daily is a strong motivation for children to attend the AWC regularly, and therefore to receive other ICDS services provided there.
- SHG members have learned to perform this service by building their technical capacities. Bainganga SHG women very proudly listed among their achievements their capacity to operate machinery.
- Women in the DFMs have increased their social, economic and political capital. This was true for the women as a group and as individuals.
- For an agricultural worker, who only gets seasonal work and is under-employed, the most important benefit was having continuous income. Women from Geeta SHG said, “We never used to get work, and now we have continuous work for the full 12 months.”

- They were saving more, and, as a result, they reported being no longer dependent on moneylenders for high interest loans and being able to hold on to their assets during emergencies. One woman took a loan of Rs. 3,000 for her husband's medical treatment. Without this loan, she said she would have been forced to sell her land. Some women reported investing in assets such as gold jewelry, radios and housing. One said that she took a loan of Rs. 7,000 towards housing.
- A number of women reported more status and respect from their family members as a consequence of their earnings. Poor women were earning higher incomes which they reported investing in their families. Women reported spending more on food, education and health needs of their families?. Women said, "We can now educate our children for as long as they want to study."
- Being able to contribute such a substantive amount to the household has increased her standing as a decision maker in the family and her standing in the community, since, as she put it, "Everyone loves money and we have got it." Women from Geeta SHG said, "Now we have respect. Our husbands are no longer shouting at us. We are spoken to well. Earlier we did not know much, so we were never consulted. Now we are called upon for any major decisions to be made in the family."
- The social and political capital of these groups has increased as they have developed relationships with institutions such as the AWC, banks, *panchayats*, and officials from ICDS and PR&RD. According to women from Geeta SHG, "We can talk to the government better now. We can go any time to the bank. We can sell food to the *anganwadi*." Relationships have also developed with shopkeepers where according to women, "If we don't have money we know the shopkeeper well enough to ask for things on credit." For the women the relationships they built with each other were the most valuable. In describing these relationships, Geeta SHG members said, "We can help each other during emergencies. We don't fight ever. We work together and we have fun."
- Several SHG/DFMs reported on remarkable changes in their communities as they had gradually gained strength and collective self-confidence. At least two groups reported that domestic violence was now absent in their community, when there had previously been a significant amount. They felt confident enough to go to a house (whether of a group member or another woman in the community) and speak collectively as a group to a husband about domestic violence, which they said had completely modified the behavior of the men they approached. The credibility and influence of such groups could be an excellent platform for other BCC, particularly related to nutrition, if ICDS were to train them as change agents. The potential for this was seen in the behavior of the women themselves as reported by Bhaivalaxmi SHG, "We never used to vaccinate our children but now we do. Our children now eat iron tablets." They were ideally positioned to teach other women about the importance of nutrition, particularly during pregnancy.

- They now have more political capital in that they are able to raise issues in the *gram sabhas* (village community meeting) and with the *gram panchayat* (democratically elected grass roots body). Geeta SHG members said, “After 2004 we began to raise issues in the *gram sabha*. We talk about women’s issues, land and electricity. We have spoken to the *panchayat* several times about water supply for our food processing work, but they have not listened.”

n. *Challenges*: The major challenges reported by women in the DFMs related to the policy shocks experienced due to ICDS state-level decisions which impacted their financial viability, such as:

- Requirement to provide 6 different recipes per week
- Some food production responsibilities transferred to other organizations
- Receipt of payments through the AWWs

2.2. DFMs in Andhra Pradesh

2.2.1. General Situation

Andhra Pradesh represents a combination of centralized models — such as those operated by the vendors and the State Corporation AP Foods — and, according to CARE, pilot DFMs set up in 4 blocks, two with CARE assistance and two with government-assisted DFMs. In AP, the DFMs are called Food Processing Units (FPUs). The DFMs supported by CARE and ICDS were launched in September of 2002. The assessment team visited two of the CARE-assisted DFMs. We heard about other possible DFM pilots under the IKP, but we were unable to learn anything substantial about these, including their current stage of development (planned or underway). In meetings with state-level ICDS officials, they discussed in general terms their intention to make further experiments with DFMs.

Prior to establishing the DFM Groups, ICDS, Food and Nutrition Board officials, and CARE staff explored the acceptability of the model and the recipes in the community by meeting with village elders and mothers. The FPUs process food using basic machinery provided by CARE. They then supply this processed powdered food to surrounding AWCs; each FPU serving 20–50 AWCs (the two we assessed covered 37 and 49 AWCs). Capacity-building for the FPUs was provided by ICDS and CARE, focusing on food processing and handling, and on operating the machines, hygiene and book keeping. The women were asked to get health check-ups, including TB screening, prior to forming the unit in order to help ensure safe food preparation.

CARE’s AP model emphasizes a central role for the mothers of children attending the AWCs by using members of their local Mothers Committees, which may have been already in existence, or formed specifically for this purpose. The FPUs consist of selected members of these Mothers Committees, with *panchayat* members playing a limited role in monitoring raw material supplies. Every unit has approximately 10 members, chosen from among the local Mothers Committees. Although many of the FPU members were part of pre-existing SHGs, they created the FPU as a new SHG, withdrawing their membership from their previous SHGs.

The original concept of involving mothers of the AWC children was based on an assumption that they have greater stakes in and therefore higher ownership of the entire process. They would be motivated to ensure the best service for their children. However, this idea must be re-examined carefully. As their children grow older and leave the AWCs, the mothers would clearly no longer have the same level of involvement. Retaining the original members would go against the concept of having mothers manage the DFMs. If they are replaced, however, this leads to rapid turnover in FPU membership which could lead to operational challenges, and challenges for continuity of knowledge and capacities. This would increase the burden on ICDS which would need to constantly train the new members. Mother's committees are known to be weak (or non-existent) in many locations, so building a new SHG from among the mother's committees requires more effort, while simultaneously diluting the strength of existing SHGs by drawing members away from them. In AP, we understand the membership of these pilot DFMs has not been shifting as members' children "graduate," so the original reason for drawing the FPUs from among mother's committees is gradually becoming irrelevant. If SHGs had been selected in the first place, it is likely they would have provided a strong platform of women, most of whom would have been or would become mothers at some point in any event, so their appreciation of the importance of the SNP would be strong. AP's decision to create new groups rather than use existing, established SHGs provides little if any benefit, while giving up the advantages of convergence with a proven resource.

Andhra Pradesh has a long standing reputation as a forerunner of the SHG movement in India (Galab and Rao 2003). This has developed over time into a large-scale IKP under PR&RD, with a state-wide network of SHGs federated at all levels using the Mutually Aided Cooperative Societies Act (a.k.a. the MAC Act).²⁰ Ironically, no convergence with the DFMs established by CARE and ICDS has occurred in AP; this represents a significant missed opportunity. The women in the new FPUs do not have a credit line or sufficient savings to serve as a buffer for emergencies. Although there are a few exceptions,²¹ in general they are not linked to banks, or graded like the other SHGs, nor do they have membership in the federations. In addition, involving the Mothers Committees tends to put further emphasis on spot-feeding, which does not address the priority target groups where supplementary nutrition is most apt to reduce malnutrition.

However, despite these challenges, like the SHG-based DFM Groups in MP, the AP model also offers the benefit of regular availability of fresh food and some spill-over benefits from the women-run FPUs.

2.2.2. Comparative Features of the Andhra Pradesh Model

- a. *Typology*: "Food Processing Units" created from local Mothers Committees and supported by CARE or the government on a pilot basis.
- b. *Players*: Mothers committee members have been selected and trained to run Food Processing Units (FPUs). The FPUs supply processed food to AWCs, whose staff distribute it to the children and mothers. Panchayat members play a monitoring role.

²⁰ The Andhra Pradesh Mutually Aided Cooperative Societies Act, 1995.

²¹ ICDS officials interviewed said that several of the FPUs are now in fact linked to banks and have some access to bank credit.

- c. *Current Membership*: Approximately 10 women created out of local Mothers Committees, typically from a single panchayat.
- d. *Founding & Initial Operations*: The CARE-supported FPU started between September 2002 and January 2003. Prior to this, the AWW, an ICDS supervisor, and CARE staff held meetings with the village panchayats and leaders to build support for the concept. In theory, each AWC has a Mothers Committee consisting of eight members. Selected Mothers Committees from a few communities in close proximity to each other were asked to decide which members would be interested in forming a food processing unit to provide food to the AWC. CARE reported that their staff spoke to family members to ensure that the families did not object to the selected women forming a food processing unit. Before the groups were formed, the chosen women were asked to take a blood test and health check up to ensure that they did not have any skin diseases and are free from tuberculosis. After this, women sourced a space based on clear specifications given to them by CARE (e.g. a space with a separate hall, separate kitchen and storage space).
- e. *Capacity-building*: The women were taken on an exposure visit and given training by CARE on how to weigh, prepare and mix food, operate and maintain machines, seal packages, maintain hygiene in food preparation, food delivery, and how to source inputs. They were also taught how to maintain records and keep accounts, initiate savings and credit activities, handle group dynamics, etc. In the initial five to six months, ICDS supervisors, AWWs and CARE staff visited the centers regularly to correct mistakes in record keeping. Women were also taken by CARE staff to the markets to learn how to source inputs. CARE staff report that the women received the training necessary to manage a food processing unit, presumably with some similarity to what was provided in MP, but the financial management and entrepreneurial skills provided by SGSY in MP were not developed in AP.
- f. *Initial and Current Economic Activities*: Prior to the formation of the food processing units the Mothers Committees were not involved in economic activities. After the formation of the food processing units, they have been engaged in processing and supply of food to AWCs.
- g. *Food Prepared*: The food consists of roasted and ground *jowar*, ground nuts, Bengal *gram* and sugar which are processed into a powder. This powdered preparation can be used in several forms (i.e. as porridge or bread), but in the spot feeding it was usually served by simply adding water to the powder and preparing balls.
- h. *Loans & Subsidies*: These groups received no bank loans or subsidies. However, under a special arrangement, the money from ICDS is released 15 days before the month the group will deliver the next supply of food to the AWCs. Since it takes time to cash the check, and the DFMs need to procure ingredients in advance to process the food, they have, on occasion, used moneylenders (for which they paid interest of 2% per month) in addition to obtaining credit from shopkeepers. They had very low levels of savings of about Rs 3,000 per group; however the groups reported that some earlier savings were now invested in stocks of raw materials. CARE staff reported that a special fund flow mechanism was created for the pilot involving advance payment.

- i. *Other forms of assistance provided:* CARE provided machinery, such as grinders, sealing and packaging machines and storage bins, utensils, buckets, a steel pot for water and glasses.
- j. *Current Earnings & Savings:* The members reported earning about Rs 1,500 to 2,000 per woman per month.²² Raja Rajeshwari and Arunodaya group members both reported an increase of group savings over time from Rs. 20 and 30 respectively to Rs. 50 per woman per month, which was modest compared with the savings of groups in MP, especially considering the difference in earnings.
- k. *Performance of DFM:* As in MP, performance of the AP FPU was assessed in terms of: economic viability; technical considerations (e.g. overall perceptions of quality of food, food supply interruptions or lack thereof, the extent of corruption, and the burden on the AWC staff); and, social and/or political effects of the program.
- The members of the FPU in AP were earning high incomes but did not have a strong economic base of savings or credit to fall back on, or an understanding of the value of saving and money management. Collective savings as a habit had not been strongly inculcated as is typical for SHGs.
 - CARE staff reported that, unlike SHGs, the AP groups do not have the capacity to absorb financial shocks. For example, a flood washed away all the stock of one unit. The State Government stepped in and provided support from flood relief funds. According to CARE staff, the unit would not have survived otherwise.
 - A major problem faced by the FPU related to the initial requirement for community contributions. Of the Rs 1.35 spent per child, the AWC worker was supposed to collect 25 paise from the mothers. This resulted in low levels of participation, and the women reported not making any income during this period. Eventually the women and the AWC worker went house-to-house to raise awareness of the importance of nutrition, and the number of program participants rose as result. The system of community contribution was finally discontinued
 - The quality of the food, as reported by the mothers, was good and the children liked it. The mothers also reported receiving the THR, but they reported feeding this food to the husbands and other family members as well. As a result, the THRs did not last for the entire 30 days they were meant to last; some mothers reported that the THRs lasted only 10-15 days.²³
 - Initially the groups experienced food supply interruptions due to the machines breaking down, and the lack of local mechanics who knew how to repair them. The women were not trained in how to use the machines, which they operated continuously, even when over-heated. Women initially expected CARE to pay for

²² Based on the financial data, earning ranged from 300 to 1,300 in 2004/5, from 100-800 in 2005/6, and from 1,000-3,500 in 2006/7.

²³ This means that the key beneficiaries for reducing childhood malnutrition – P&L women and children under 3, were not being effectively targeted and more behavior change communication and education is required.

all the maintenance costs, since CARE had provided them — the women had no sense of ownership. ICDS officials were also unable to identify the cause of the constant machine breakdowns, as they too were untrained in their use. CARE brought in mechanics to identify the problem and train the women on how to run the machines and perform basic maintenance. They also trained local mechanics to repair the machines.

- Officials reported that the food was easy to prepare and that it took the AWC helper only 10 minutes to mix the food into balls. This meant a very low burden on AWC staff.

l. *Monitoring and Reporting:* The DFMs deliver food to the AWCs and are compensated based on the weight and number of bags. The block officers provide details by group on the number of bags delivered, weight, and the total amount paid. This information is in turn supplied to the district and state offices. As with MP, this system is an upward flow of data, with information put to little or no use at any level. CARE staff reported that the monitoring capacity of ICDS was limited, which could potentially lead to corruption in the long run, especially during a scaling-up phase.

Initially, the food was tested in laboratories of the Food and Nutrition Board for quality but this was later stopped. Although there are no complaints, officials said, “We do not know if nutritional content of the food is up to mark right now.” However, the lack of complaints is probably a good indicator of the quality of the food, and lack of testing of food is not unique to the DFM or AP. The situation in MP was similar.

m. *Impact:*

- The CDPO in Siricilla block claimed a strong impact of the ICDS interventions on nutrition levels. According to the CDPO office in Siricilla in 2002, there were 80-90 children who were classified 3rd and 4th grade malnourished in 232 centers, which was reduced to 57 children across 312 centers in 2007.
- The CDPO, observing the changes in the women, said that they had now started looking in newspapers for the rates for grain, as well as calling up traders to get their quotations and rates. Given a choice, according to ICDS officials, women chose better quality food, even if it costs more, because better quality could decrease the cleaning and processing time from 30 days to 20 days, and women felt this was worth it. This also ensured a better quality of food for program participants.
- Women from both Arunodaya and Sri Rajarajeshwari FPU shifted from the hazardous work of *beedi* rolling, earning only Rs 500 per month, to the higher earnings of the FPU where they earn Rs 1,500–2,000 and work only 15 days a month.
- Members of Rajarajeshwari FPU described the changes in their earnings from 2003 through 2007, tracing the reasons for the changes. They first earned about Rs 1,300 per woman per month, which was reduced to no earnings in May–July

of 2003 because of the community contribution system and the high cost of machine maintenance and breakdowns. After July 2003, women went from house to house raising awareness on nutrition, and the number of program participants increased steadily from about 700 to 1,080, with the result that the income of the women also went up to Rs 400–800 per member²⁴. By April 2006, the number of program participants went up to 3,379, with FPU members' incomes going up to Rs 1,200–1,500. In August 2006, the government raised the rate to Rs 1.90 per participant — members' incomes then went up to Rs 2,000 per women per month.

- As a result, of their earnings, women reported educating and feeding their children better, especially their daughters. They save some money now, and the savings are sometimes in the form of Life Insurance Corporation (LIC) policies in their own names, but also in their husbands' names; if their husbands die, the women have something to fall back on with insurance.
- The women now have a higher status at home because they are seen as earning members, with real “jobs”. The women have earned the respect of their families due to their high incomes. One woman said, “Neither my husband nor I used to work and he used to beat me regularly. Once I started making Rs 2,000, my in-laws began to talk to my husband, saying, why are you beating her, she is earning? So, he not only stopped beating me, he also got himself a job where he too now earns Rs 3,000 per month.”
- The women interact regularly with ICDS officials and *panchayat* members, and also bring up issues in the *gram sabha*, such as water supply, electricity and ration card entitlement. In the *gram sabha* and other village meetings, women from Arunodaya group said that they discussed the importance of education, family and domestic problems, among other issues. One woman recently applied for widow-pension funds because she was encouraged by the other DFM members to do so.
- Women have earned a lot of respect in the community, especially with the *gram panchayat*. The community members say, “That group is doing good work serving people.” In the weekly market, a man who noticed all the women wearing similar saris asked them what they did. The women replied that they prepared food for 50 AWCs. The women told us that the man was shocked.
- The women reported that the program training had improved their practices of hygiene and cleanliness. This was also observed when the centers were visited — women not only washed their hands and feet on entering the food processing unit, but also insisted on visitors doing the same.

n. *Challenges*: Initial challenges reported by women in the DFMs included the lack of technical expertise to operate the machines, the difficulties associated with working at night due to the lack of availability of electricity during the day, and not understanding the markets or sourcing of raw materials. These improved with experience.

²⁴ Financial data confirm that the number of rations provided by the Arunodaya Arunodaya DFM from rose from 1,700 to 2,400.

- According to officials from ICDS, machinery breakdown, use of lower capacity machinery, and lack of local mechanical expertise to repair the machines proved major challenges during the set-up period, disrupting food supply. They felt that scaling up would require mechanics, and that women and officials be trained in machine operations.
- ICDS officials also identified price increases in the basic ingredients as a major problem which was not reflected in the changes in the rates provided to the DFMs rapidly enough. The rates per program participant change occasionally, based on policy decisions, while ingredient price changes are constant.
- CARE staff told us that the special fund flow mechanism created for the pilot could not be scaled-up. In scaling-up, the regular fund flow for the SNP would have to be used, with funds routed through the treasury, which would then result in delays which groups cannot easily cope with because most are not approved for bank loans and are not registered.

2.3. DFMs in Bihar

2.3.1. General Situation

The Bihar Decentralized Food Model utilizes the AWC itself for procuring, cooking and serving food to the children. The food is bought, cooked and served daily by the AWW and her helper. This activity is monitored by a group called the Food Procurement and Monitoring Committee, which consists of four mothers, a village *gram panchayat* representative, and the AWC worker. This model has now been scaled up across the entire state. We visited two AWCs in Bihar.

The Bihar DFM relies entirely on the standard ICDS “norm” of 99 program participants per center, and the AWC worker receives a fixed amount of funds (transferred into her account) every month. The program’s “information” system is also simply based on these norms, reporting the same fixed number of program participants every day, regardless of actual attendance.

Our field visits to the centers, and their records, showed regular interruptions of food supply based on the times when the bank had to transfer funds — each quarter. Interviews with other stakeholders revealed that there were leakages, especially in the THR which were not always supplied regularly or consistently. This means the program participants for whom supplementary nutrition is most likely to effect a decline in childhood malnutrition — namely the 6-months-to-3-year age group and the P&L women — are least likely to benefit from the SNP.

However, Bihar is piloting a new model in two districts, beginning in the summer of 2007. The planned model will, in some respects, resemble the original SHG model in MP (prior to recent policy changes). A “community kitchen” staffed by members from SHGs will produce prepared and packaged food that will be provided to approximately 20 AWCs. Bihar ICDS officials have selected pilot districts where women’s groups are particularly strong, as ICDS is converging with women’s programs active in these districts. They expect to watch the pilots closely and draw a number of initial lessons, as they plan scale-up over the following six months. However, the

major difference between the planned Bihar model and the successful initial MP SHG model is that the women in the community kitchens will be paid staff, not entrepreneurs running an “enterprise” that they own themselves. This is apt to be a decisive difference — the women are unlikely to have the same sense of ownership or commitment, and there will be little or none of the spill-over benefits observed in the DFMs operating as grassroots enterprises. We would also anticipate that the Bihar pilot will require more intensive inputs from ICDS both in establishing the community kitchens and in overseeing them, partly because the women will not be the entrepreneurs and partly because no convergence is planned with a department or program with good capacity-building skills in grassroots entrepreneurship and credit linkages, unlike the pattern in MP.

2.3.2. Comparative Features of the Bihar Model

- a. *Typology*: Government supported DFMs run by the AWWs
- b. *Players*: A Food Procurement and Monitoring Committee, overseeing the AWW and her helper who are responsible for purchasing, preparing and serving the food.
- c. *Current Membership*: The DFM “Group” essentially consist of the AWW and her helper, and the monitoring committee. made up of six–seven members: four mothers (one of whom is the president), the AWW, and one or two ward and/or panchayat members.
- d. *Founding, Initial and Current Operations*: From 2006 onwards, a total amount of Rs 5,302.50 has been provided to each AWC per month through a bank account operated by the president of the committee and the AWW. As in all AWCs in Bihar and other states, the AWW and her helper educate the children and carry out other AWC functions. In addition, the AWW buys the food and keeps it at the center, where she and her helper cook it and serve it to the children. They are also expected to pick the children up and take them home.
- e. *Capacity building*: None.
- f. *Initial and Current Economic Activities*: No economic activities other than the income and expenditures associated with the food operations.
- g. *Food Prepared*: The food — mainly rice, lentils and vegetables — is bought, cooked and served daily by the AWW and her helper. We were told that extra food — from on-the-spot feeding — was sent home as THR on a daily basis in one of the AWC we visited. It was unclear how THR were handled in other sites, or even in that AWC, as no food was available on that day. This food is supplemented by fortified candy which provides micronutrients to the children. Given the importance of micronutrients, this is an excellent innovation, and decisions about introducing micronutrients through fortification are still pending in the other states we visited.
- h. *Loans & Subsidies*: None

i. *Other forms of assistance*: None, other than an initial meeting to inform the AWCs about their bank accounts.

j. *Current Earnings & Savings*: None

k. *Performance of DFM*:

- In Bihar, the DFM is not an enterprise, since the providers have none of their own resources or income “at risk,” and no financial incentive for innovation or improved performance.
- Food supply interruptions are very high, although these have apparently been reduced. At the time of the assessment team’s visit, food had not been supplied for the past 12 days. Based on the records of both AWCs we visited, many previous food interruptions were noted. The CDPO reported that in the first year food interruptions were every month, but after the fund release was changed to every three months, food interruptions were now 7-8 days per quarter.
- This can be viewed as a consequence of the DFM not operating as an enterprise but purely as a service or AWC function. There is complete dependence on ICDS cash flow, and there is no funding buffer to buy food when funds are late. As an honorarium worker with many more responsibilities, the AWW is neither motivated nor able to act like an entrepreneur in ensuring a smooth uninterrupted supply of food, while the livelihood of an entrepreneur is dependent on uninterrupted operations. (In MP this problem is avoided because the SHGs have their own funds. In AP the problem is avoided through a combination of credit and advance funding from ICDS, although the later will not be possible as the program there is scaled up).
- The quality of food is fresh, but we were unsure if the ICDS requirements for protein and calorie content were met, as there did not appear to be any standard recipe. Obviously, the issue of calorie and protein content is irrelevant if the food itself is not reaching the program participants. Spot feeding does take place when food is available, but often actual attendance might be far less than the 40 routinely registered on the reporting forms.
- According to one of the AWWs we met, the food is distributed at the end of the day to children from the community. However, other reports from stakeholders indicated that THRs were not being given out in many centers — a huge gap, since this is the main strategy for reaching the most important recipients.
- In terms of corruption, the Secretary, Department of Social Welfare reported leakages as one of the primary problems of the system. Reports of leakages were as high as 50 percent of total funds. It is primarily as a result of this that ICDS has decided to change the Bihar system.

- In the Bihar model, the burden on the AWW was the highest of the three states we observed. The committee's role was minimal, described as serving as a rubber stamp at best, and as a drain on resources at worst. The procurement — in addition to her usual cooking, serving and reporting functions — falls on the AWC staff, over and above their regular functions.
- l. *Monitoring and reporting*: Stakeholders are well aware that reporting is not only not transparent, it is silly. Every month, the AWWs get 5,302 rupees and report an identical standard number of program participants having received food. AWCs report to the block officers, who report to the district, which reports to the state office. Since the input data is useless, so is the entire reporting system.
 - m. *Impact*: The impact of this model on the provision of nutritious food to children is poor, as several reports from the field said that leakages were high and THRs were not being provided. Despite this, it was described as being an improvement over the initial period when food disruptions were much higher; this improvement was largely due to changes in the frequency of the release of funds, from one month to every quarter.
 - n. *Challenges*: There is no point in attempting to define “challenges” with this model, as it is being replaced by the state primarily because of the level of corruption, and the design of the model makes it particularly vulnerable to abuse and corruption.

2.4. The Roles of DFM Stakeholders

2.4.1. Anganwadi Workers

The primary function of the AWW is to provide pre-school education, prevent malnutrition, and assist with other health care needs of children and their mothers. She carries out the functions of the ICDS program at the grassroots level. If she is effective, her job can involve a much more extended role in the village with expectations of her from various departments. She may be expected to help form SHGs, provide health awareness to families, conduct surveys, and organize immunization and other health care camps. Yet AWWs are paid only an honorarium of Rs 1,000 per month, and their helpers are paid Rs. 500 per month.

This problem of the burdens and expectations on the AWW is of course an ICDS issue that goes beyond DFMs and the SNP. Although the SNP is a central part of the ICDS program mandate — both because of the nutrition itself and because the food attracts program participants to the AWCs where they receive other services — a key issue for any food model is the additional burden the model puts on the AWW, in potentially distracting her energy and attention from other critical ICDS services, such as behavior change communication and education related to the SNP, THR and the importance of proper nutrition. Among the DFMs studied, the initial Bihar approach, as described, would raise the greatest concern.

2.4.2. CARE Staff

Building on the longevity and strength of its contribution to food aid in India, CARE has played a pioneering role in the creation and promotion of DFMs in several states. In MP, CARE first piloted the model and then assisted ICDS in scaling it up. Given that there was not yet a Supreme Court order calling for decentralization, this was an uphill battle. CARE also piloted a different type of model in AP, where Mothers Committees were formed into food processing units, and it has provided assistance in a number of other states.

However, few CARE staff appeared to have comparison-contrast knowledge of the different models the organization had helped to pilot in different states. Some CARE staff could explain the model in one state where they had been working, but were unable to contrast it with other models. There was a substantial amount of promotional documentation on the AP model (Akshara/CARE 2006; CARE 2006b; CARE 2007a), but little documentation and apparently no promotional material on the experience in MP.²⁵ Although it appeared to be less robust than the MP model and was still reasonably well-supported as a pilot. It also appeared that CARE staff, like most ICDS staff at the state level, did not understand the financial underpinnings of the various DFM models. With this limitation, it is therefore not surprising that CARE has not been able to play a role across states in informing ICDS officials at state and national levels on the relative strengths and weaknesses of the different models or the lessons that have emerged from the pilots. To play a future advocacy role would require horizontal learning at all levels for CARE, and that CARE staff, in turn, play a facilitative role in ensuring the same for ICDS officials.

These gaps in knowledge are one reason for the current assessment.

2.4.3. ICDS Officials

ICDS staff at village, block, district, and state levels were interviewed separately. At the village level, ICDS staff consisted of the AWW and her helper. At block level, ICDS staffing patterns consist of a CDPO, under whom there are supervisors who regularly visit and monitor the AWCs. At the district level there is a District Program Officer (DPO), and staff who record and consolidate the block-level data to report to the state offices. At the state level, a Secretary of Women and Child Development Department and the Director oversee the program.

The Rural Development Department played a key role in MP in forming SHGs under SGSY. This SHG platform was not the approach used by ICDS in either Bihar or AP — even though AP is well-known for its network of robust SHGs. MP was the only state visited by the assessment team where there was strong convergence between the Rural Development Department and ICDS. In AP, the DFMs were largely supported by CARE in collaboration with ICDS. ICDS officials in Bihar had also worked independently of other government departments, but with the planned new pilots they will converge with the Women's Development Corporation (WDC) and Mahila Samakya (MS), an NGO, and through them, work with women's SHGs.

²⁵ This may have been a case of CARE having had more funding for such documentation when it developed the AP model.

The senior staff interviewed in the three different states had an uneven and sometimes limited understanding of the DFMs in their states. In MP, the senior staff of ICDS had both been in this position since 2006, and in AP the ICDS Secretary had been recently transferred to the state.

In MP, the senior ICDS staff interviewed did not seem to appreciate the strengths of the current DFM and the potential risks posed to the DFMs by the new policies — primarily the six-recipes-a-week policy — that they were in the process of implementing. These policies may have been based on a political agenda that was geared to meet resistance from the SHGs and their own lower-level staff, but that everyone would “have to adjust.” They seemed to feel that an emphasis on the variety of food trumped all other considerations. One of the ICDS state-level officials presented the shift as a trade-off between the women’s SHGs and the children. However, ICDS staff at block and district levels appeared to have a very solid understanding of the DFMs, what they contributed to the ICDS program, and how the new policies threatened them. Several officials at block and district levels actually shared documents and information with us in the hope that some advocacy was possible at the state level to reverse some of the recent decisions. They seemed as concerned as the women running the SHGs. In arguing about their problems, one SHG member said to us: *“We will first fight with you so you can fight on our behalf.”*

In AP, ICDS officials at the lower levels held strongly to an opinion that the Mothers Committees should run the DFMs, and they were not open to the idea of convergence with the Rural Development Department, known in AP as Indira Kranthi Patham (IKP), a well-funded World Bank Program, which fulfills a similar role to that of SGSY in MP. The resistance on the part of ICDS to collaborating with IKP was primarily articulated as not wanting to share credit with this large prestigious program. During two separate interviews in AP, two ICDS senior staff members discussed the DFM in general terms, and the possibility of further experimentation. They described this experimentation as a “pilot” although CARE staff had said the government did not want any more “pilots.” Senior staff at the ICDS state level were unclear about how the DFMs piloted by CARE operated, the lessons that had emerged from the DFM pilots involving the Mothers Committees, or about the future of a planned expansion of some undefined DFM. Although they were planning meetings with IKP to discuss the possibility of convergence in the future with new DFMs to be piloted in a collaborative manner, they seemed, at best, ambivalent about convergence with IKP.

In Bihar, interviews with senior ICDS staff showed that they understood and had digested the lessons learned from their experiment with AWW-based DFMs, and they were using these lessons to build the future pilots. The ICDS staff at senior and lower levels all reported rampant corruption in the current DFM and planning was already well underway to replace the current model with new pilot models that would work with women’s groups and SHGs. While the Bihar ICDS officials were best able to articulate both past lessons and future plans, as compared with their counterparts in the other two states, the future plans would rely on selecting women from the SHGs who would then work as paid staff in community kitchens. This model would lack the micro-enterprise nature of the MP model, and is therefore apt to lack the entrepreneurial spirit that could be tapped into or to provide many — if any — spill-over benefits. Since Orissa has apparently already attempted and abandoned a DFM that relied on paid labor, it might be useful for Bihar officials to investigate the lessons learned in Orissa.

3. FINANCIAL VIABILITY, PLANNING, AND MANAGEMENT

This section of the assessment report is focused primarily on financial viability and the factors that drive revenues and costs. However, the ability of the DFM Group members to plan and manage the financing of the DFMs — which includes both an ability to save and borrow money and a well-developed understanding of the factors that create financial viability — is also a critical aspect of financial viability. Therefore aspects of financial planning and management, including investment decisions, are discussed within the context of revenues and costs. The intention here is to explain what makes the DFMs successful (or not) as financial enterprises. Detailed understanding of these dynamics should be particularly useful to ICDS policy- and decision-makers at the state and national level.

As with any enterprise, the basic financial underpinnings of the DFMs can be viewed in terms of revenues and costs. In one sense, financial viability is attained if revenues cover costs. However, a surplus of revenues over costs is normally required to maintain an enterprise as a going concern²⁶. A DFM needs to be worth the investment of time, energy, and capital that the women operating it put into it. The women should be able to pay themselves wages or distribute profits on a regular basis, and whatever they earn (in wages or distributed profits) needs to exceed whatever alternatives are available to them in terms of their own labor and investments. Since the “opportunity costs” for the labor of impoverished and unemployed women are minimal — perhaps they can find occasional work as daily wage laborers — the wages or profits they earn from the DFM do not need to be very high, but they need to be adequate, particularly when there is some risk in their taking on an enterprise in which their own savings are invested. A consciousness of these financial aspects of the DFMs will make the women much better managers of the enterprise.

The following sections discuss revenue and cost drivers in detail. Data obtained from the DFMs we studied are used to illustrate the discussion of revenue and cost drivers. Since the sample of DFMs was small, these data are considered illustrative, but, in most cases, stakeholder discussion suggest they are representative of other DFMs. Given that we had three years of financial data for all but one DFM (because it has only been established in January of 2006), the data included 22 sets of detailed annual financial transactions. The equivalent data found in the Bihar records and reports were so artificial as to be irrelevant and are not considered in the comparative analyses here — the “Bihar exception” is discussed in more detail later in this section.

3.1. What are the DFM Revenue Drivers?

Revenue drivers are the factors responsible for variations in the income or revenues of an enterprise. For the DFMs, revenues are driven by: 1) the number of program participants per AWC and the quantity of food provided per participant; 2) the number of AWCs served by the DFM; 3) the price paid per participant and/or per kilo of food based on different recipes; and, 4) the potential for sale of by-products or related goods and services.

²⁶ Although this is often misunderstood or misinterpreted, even non-profits must earn a surplus of revenues over costs (equivalent to “profits”) if they are to remain financially viable in the long term, unless they have some sort of endowment capital. Although profit-making is not their objective, non-profits need working capital to fund receivables and purchase equipment as their operations expand over time, and as a reserve to cover unexpected losses.

3.1.1. Program Participants per AWC and Food per Participant

How many program participants does an AWC serve and what benefits do the participants receive from the DFM? In the current Bihar system, the question of the number of program participants is artificially being recorded as the GOI norm, or formula, regardless of how many program participants of each category actually attend the AWCs: AWCs are using this data to support their claim to their monthly payments (at the maximum budget level) each month. In AP and MP, although there may be weakness in the reporting system, reported data comes closer to reflecting reality. We were able to obtain state-wide data in MP, and for one block in AP, where there is only very limited DFM implementation. The breakdown of reported average program participants (by category) per AWC in all three states is provided in Table 1 and Figure 3. Based on recent data reported in each state, the average number of program participants per AWC was 82 in MP and 64 in AP. The standard formula of 99 was applied in Bihar in the absence of better data.

Table 1: Average Program Participants per AWC in 3 States²⁷

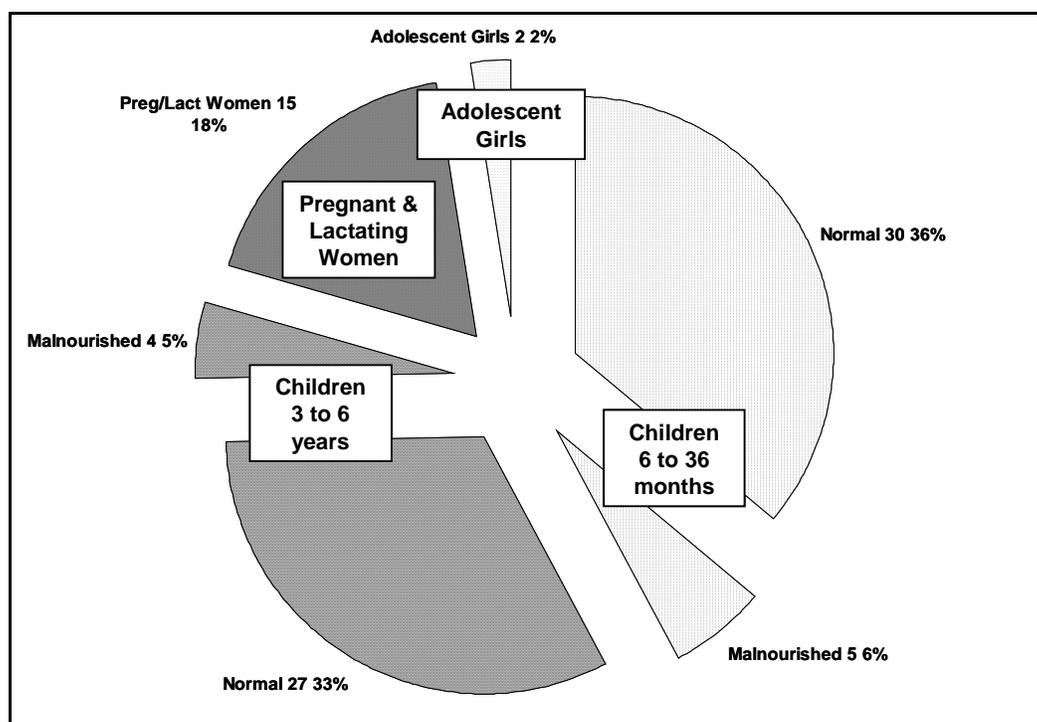
Program Participant Categories		Madhya Pradesh		Andhra Pradesh		Bihar	
		No.	%	No.	%	No.	%
6 months-3 years	Normal	30	37%	20	31%	28	28%
	Malnourished	5	6%	4	6%	12	12%
3-6 years	Normal	27	33%	26	40%	40	40%
	Malnourished	4	4%	3	4%		
Pregnant & Lactating women	Normal	15	18%	12	19%	16	16%
Adolescent girls		2	2%	N.A.	N.A.	3	3%
Total		82	100%	64	100%	99	100%

Since payment to the DFM is based on the number of program participants and the amount of food provided to each different category, both the total number of program participants and the relative proportion in each category are revenue drivers for the DFMs. The case of MP illustrates dramatically what can happen to revenues as this changes because of policy decisions. Table 2 and Figure 4 give this breakdown for program participants and food benefits in MP, and also show how the proportion of malnourished children and/or P&L women and adolescent girls increases the number of kilos of food per AWC. (During an average month, an AWC is open 25 days.)

²⁷ The average number of beneficiaries for MP is based on statewide ICDS consolidated Form-7 data as of January, 2007. For AP, the data are from consolidated Form-7 for Sirisilla block only. For Bihar, the standard GOI formula is used. In MP, food (*panjeeri*) for 3–6-year-olds is currently provided by MP State Agro Industries, not by the DFM.

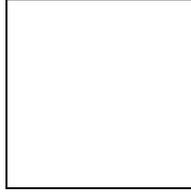
Table 2: Grams of Food per Participant in Madhya Pradesh

Program Participant Type	Number of Program Participants	Percent of Total Program Participants	Food quantity per PP per day ²⁸ (grams)	Quantity per Participant per 25 days	
				Kilos	Percent
6-36 months-Normal	30	37%	80	60	29%
6-36 months-Malnourished	5	6%	160	20	10%
3-6 years – Normal	27	33%	80	54	26%
3-6 years – Malnourished	4	4%	160	16	8%
Pregnant & Lactating women	15	18%	130	49	24%
Adolescent girls	2	2%	130	7	3%
Total	82	100%	740	206	100%

Figure 3: Number of Recipients in MP, by Type of Participant


²⁸ Based on the six-recipes-per-week policy, providing 80 grams per beneficiary for normal children under 6 years.

Figure 4: Amount of Food in MP, by Type of Participant
(Kilograms per Program Participant per 25 days)



However, even when the number of program participants and the number of kilos of food (based on the participants) is known, this does not guarantee that the DFM will receive a contract or receive revenues from ICDS for this number of program participants or kilos of food. In MP, ICDS has given a contract to Agro Industries (a state corporation) for provision of its weaning food mix (*panjeeri*). The target program participants for the weaning mix are the 6-36 month-old children, so this effectively means that the DFMs have lost a significant portion of the “market share” for each DFM to Agro Industries. As Table 2 and Figures 3 and 4 illustrate, the lost market share is 43% of program participants and 39% of quantity of food — or the market share — for an average AWC.

Agro Industries is receiving Rs.16.20 per kilogram for its soy-based weaning mix, and it is supplying the mix to all blocks. As discussed below in the section on ICDS prices paid for food, the DFMs had been receiving Rs. 11.50 per kilo for the soy-based food they were previously producing. This food was considered appropriate as a weaning food. Although one stakeholder described Agro Industries as having more sophisticated production methods, including techniques that would help to preserve the quality of the weaning mix, other stakeholders complained about the product received from Agro Industries, saying that it was not fresh, and they often found ants in it. We were not informed about any special fortification for the weaning food made by Agro Industries.

In AP, AP Foods Corporation has been supplying food to about 40% of the state’s AWCs — in non-DFM blocks — with ready-to-eat (RTE) food for all program participants. We heard no complaints about the quality of this food, but we did not visit areas where it was being supplied. There is apparently a general intention to phase this supply system out as a decentralized system is gradually built to replace it.

3.1.2. AWCs per DFM²⁹

How many AWCs can or does one DFM Serve? Although there is clearly a number of AWCs below which break-even is not possible, little or no attention has been paid to optimizing the number of AWCs per DFM in order to assure both financial viability and economies of scale, i.e. maximizing operational efficiency. Indeed, a few stakeholders spoke of allocating AWCs so that more DFMs could be involved, as though this would be a beneficial form of “spreading the wealth”, when taking this approach too far could cause the collapse of existing DFMs.

Each block in MP has 2 to 3 DFMs, while the blocks with active DFMs in AP have 5 to 7 DFMs. However, as discussed above, the amount of food provided per AWC is higher in AP than in MP

²⁹ This section of the assessment will only deal with MP and AP, since in Bihar the AWW was the DFM “group”.

because the Agro Industries is supplying approximately 39% of the volume of food for each AWC in MP. Therefore, the DFMs in MP need to serve a larger number of AWCs to be financially viable. For our sample of eight DFMs, a single DFM had been managing anywhere from 20 to 96 AWCs and providing from 128 to 174 kilos of food per month in fiscal year 2006-07.³⁰

Table 3: AWCs per DFM and Quantity of Food Supplied FY 2006-07

DFM Group Name & Location	AWCs Served	FY 2006-07 Kilos Supplied	Kilos Supplied per month
Vinganga, Keolari Block, MP	30	1,623	135
Bainganga, Seoni Block, MP	20	2,086	174
Adarsha, Papiriy Block, MP	64	1,584	132
Bhaivalaxmi, Papiriya Block, MP	54	1,570	131
Jyothi, Jawali, Babai Block, MP ³¹	96	1,534	128
Jyothi, Singhpur, Babai Block, MP ³²	12	593	198
Sri Rajarajeswari, Sirisilla Block, AP	49	1,761	147
Arunodaya, Vemulawada Block, AP	37	1,603	134

While geographical distances and the number of AWCs served have implications for transportation costs, most DFM Groups studied appeared capable of handling more AWCs than they were currently servicing. We also heard of cases where DFM Groups had acquired additional AWCs when another DFM failed, and the failure of the one DFM Group made the surviving groups more financially robust because they benefited from serving a larger volume of AWCs.

The number of AWCs served is an important determinant of financial health, and it appears that — putting aside other variables which can play an even more critical role — a DFM should ideally serve from 40 to 60 AWCs if it is to be financially robust. When the DFM Group is supplying all of the AWCs food requirements, this would naturally enable it to thrive financially with fewer AWCs. The experience of Jyothi Jawali (which transferred 49 AWCs to Jyothi Singhpur) in MP might suggest that roughly 100 AWCs is too large a number for one DFM to serve. However, per the WFP representatives, the WFP-supported DFM in MP has been serving 162 AWCs without apparent difficulty. In addition to being a cooperative with several SHGs involved, the WFP-supported model benefited from greater investment in heavier duty equipment and machinery; this may allow it to obtain better economies of scale in terms of capital investment, but it would not reduce the transport costs and other complications of dealing with a larger number of client AWCs.

3.1.3. Price Paid by ICDS for DFM Food

How much is the DFM being paid for each kilo of food it produces? Although the GOI has a payment ceiling per program participant,³³ less than this has typically been paid for some types

³⁰ Fiscal Years run from April 1 through March 31 of the following calendar year.

³¹ 96 is a weighted average. The DFM served 108 AWCs for 9 months, then gave 49 AWCs to Singhpur DFM.

³² 12 is a weighted average. This DFM started activity January, 2007 with 49 AWCs (see previous footnote).

of food produced in the DFMs studied, although prices have risen over time. In MP, for example, the price paid to the DFM per program participant has risen twice as the type of food produced has changed. There was one increase when *moong dal* was substituted for soya, and another price increase as the six-recipes-per-week policy was being introduced.

In MP, the DFMs were receiving Rs. 11.50 per kilo when they were producing the wheat and soya mix. When *moong dal* was substituted for soya, the DFMs received Rs.15.5 per kilo, because of the increased cost of the ingredients to the DFMs. (Note that Agro Industries is being paid Rs.16.20 per kilo for the wheat and soya weaning food it is providing to ICDS, and the ingredients used are comparable with those used by the DFMs when they produced the wheat and soya mix.) The price paid under the new six-recipes-per-week policy will be the GOI budget ceiling of two rupees per program participant, or Rs. 25 per kilo for the puffed rice balls (*murmura laddoo*). The food recipes mentioned here are based on approximately 80-85 grams per day per participant for normal program participants (i.e. children who are not malnourished), so one kilo of food feeds 11 or 12 participants. Table 4 summarizes the different prices paid by ICDS for different food recipes and/or to the MP Agro Industries and AP Foods versus the DFMs.

Table 4: ICDS Prices Paid for Different Food Mixes

Type of Recipe	Quantity per Participant (in grams)	Unit Price	
		Per Kilo	Per Participant
Wheat and Soya mix, MP	85	11.5	1.0
Wheat and Moong dal mix, MP	85	15.5	1.3
Weaning Mix, MP Agro Industries	85	16.2	1.4
Rice balls (<i>murmura laddoo</i>) MP ³⁴	80	25.0	2.0
CARE-Supported DFM food, AP ³⁵	85	22.3	1.9
Ready to eat (RTE), AP Foods Corp	85	22.3	1.9

We were given no information on how the prices for Agro Industries or AP Foods Corporation were set by ICDS, and neither agency shared cost data with us. However, it is striking that ICDS has been paying from 100% to nearly 150% more to these semi-governmental agencies for food that is basically the same in terms of calorie and protein content to that prepared by the DFMs. (The puffed rice balls cannot be compared with the food provided by the Agro Industries or AP Foods, as they are entirely different from the other foods, which are all various forms of powder.) We were not informed of any additional fortification provided by Agro Industries or AP Foods, and we heard complaints both about the availability and (in MP) the quality of the food.

In general, the increases in prices paid by ICDS to the DFMs have been based on increases in the cost of the ingredients for the different recipes as ICDS changed the recipe requirements. How-

³³ Current GOI norms used for budget calculations are Rs. 2 per child, Rs. 2.30/ per P/L woman, and Rs. 2.70 for severely malnourished children. More than this is paid in some states that have augmented the GOI budget with their own funds, and Bihar intends to augment the GOI budget with the new model it is planning to pilot.

³⁴ Because of the high protein and calorie density, fewer grams of food are required to meet the minimum calorie and protein requirements per beneficiary.

³⁵ The food consists of roasted and ground *jowar*, ground nuts, Bengal *gram* and sugar which are processed into a powder. These CARE-supported DFMs also receive advance ICDS funding (15 days in advance of end of month).

ever, the increases have not been adequate in MP, and the six-recipes-per-week policy is expected to represent a major policy shock for the DFMs in terms of financial viability. These issues are explored below in the section on cost drivers for recipe ingredients.

3.1.4. Other Revenues

In addition to the revenues directly related to food production, the DFMs have found other related sources of income, such as selling by-products from their food production and selling the used bags from the packaging for the ingredients. DFMs have not consistently accounted for other income, and the data presented in Tables 5 and 6 are therefore underestimates of actual “other income” as a percentage of total income. The Adarsha and Bhaivalaxmi DFMs of the Pipariya block of MP have in fact been consistently accounting for this type of income, so they may be more representative of what is possible and/or what has been happening across DFMs in MP. Income for by-products appeared to be slightly higher when the wheat and soya mix was being supplied, and this should have been the case because there was more processing and more by-products created during the processing. The SHGs operating the DFMs in MP were also earning income from interest, and there were some efforts at other entrepreneurial activities (e.g. honey bees) but nothing that had yet developed into more than a passing experiment within our small sample of DFMs. Given their experience and training in financial management and entrepreneurial skills, the DFMs in MP were more skilled than those in AP at saving to plan for other ventures, to lend the funds and earn interest, or to build a reserve for the replacement of equipment. Nevertheless, even for the two DFMs in Pipariya block in MP that recorded all of the other income earned by the group, well over 90% of the income earned was derived from sale of food to ICDS.

Table 5: Other Income as a Proportion of Total Income

DFM Group Name	Average	Low end	High end
Vinganga, Keolari Block, MP	5.6%	3.8%	6.6%
Bainganga, Seoni Block, MP	4.9%	4.1%	5.7%
Adarsha, Pipariya Block, MP	5.3%	3.3%	7.7%
Bhaivalaxmi, Pipariya Block, MP	6.0%	4.8%	7.1%
Jyothi, Jawali, Babai Block, MP	3.3%	0.9%	7.0%
Jyothi, Singhpur, Babai Block, MP	6.2%	6.2%	6.2%
Sri Rajarajeswari, Sirisilla Block, AP	0.3%	0.3%	0.4%
Arunodaya, Vemulawada Block, AP	0.4%	0.3%	0.7%

Table 6: Total Revenue during FY 2006-07

DFM Group Name	Sale of SNP	Sale of by-Products	Other Income	Total
Vinganga, Keolari Block, MP	726,375	29,040	-	755,415
Bainganga, Seoni Block, MP	650,610	35,500	3,500	689,610
Adarsha, Pipariya Block, MP	1,566,208	70,165	13,482	1,649,855
Bhaivalaxmi, Pipariya Block, MP	1,310,495	49,650	24,730	1,384,875
Jyothi, Jawali, Babai Block, MP	2,276,158	22,500	94,009	2,392,667
Jyothi, Singpur, Babai Block, MP	449,472	12,600	17,230	479,302
Sri Rajarajeswari, Sirisilla Block, AP	1,743,824	4,760	-	1,748,584
Arunodaya, Vemulawada Block, AP	1,192,540	3,900	-	1,196,440

3.1.5. The Bihar Exception — Revenues

The only revenue driver in the Bihar model is the Government of Bihar formula for program participants per AWC, food per participant, and rate paid per participant. Rather than basing payment on actual data regarding these drivers, as in MP and AP, the government “norm” is simply being applied across the board to every AWC without consideration for the actual population served by an AWC and the composition of that population. Each AWC currently receives Rs. 5,302.50 per month from ICDS based on the Formula shown in Table 7.

Table 7: The Bihar Model Formula

Category	Number of Program participants		Quantity of SNP (in grams)		Rate for SNP		Rupees per month
	Normal	Mal-nourished	Normal	Mal-nourished	Normal	Mal-nourished	
6 – 36 months	28	12	90	180	2.00	2.70	2,210.00
3 – 6 Years	40	Nil	90	Nil	2.00	Nil	2,000.00
P&L women	16		150		2.30		920.00
Adolescent Girls	3		150		2.30		172.50
Total	99		Total (per month)				5,302.50

ICDS sanctions one AWC per 1,000 population. Based on the original GOI formula, 40% of the population was estimated to be BPL; of these 400 per AWC, 10% (or 40) were below 3 years, 10% (or 40) were between 3-6 years, 2% (or 8) were pregnant, and 2% (or 8) were lactating women, and 3 were malnourished adolescent girls.

3.2. What are the DFM Cost Drivers?

The costs of the DFMs are driven by: 1) the unit costs of the ingredients required to make the food; 2) the relative production wastage rates for each type of ingredient that is an input to the final food product; 3) costs of labor, as well as any contracted outside food grinding; 4) transportation costs for pick-up of ingredients and delivery of finished food products and for trips related to the collection or deposit of funds from the bank or AWC clients; 5) costs for electricity and other fuel; 6) banking transaction costs and interest on loans; 7) rental expenses; and 8) capital cost (or investment), depreciation on equipment which will need to be replaced at regular intervals, maintenance and repairs. Other costs of running the DFM Groups, such as record-keeping and group management, were generally negligible.

3.2.1. Food Ingredients for Basic Recipes

The primary cost for the DFMs is the purchase of the basic ingredients for the food they produce. As seen in Table 14 later in this section, by 2006–07 overall ingredients amount to almost 90% of total recurring costs (excluding labor and depreciation) for the sample of DFMs studied. (Data presented for other costs include data from earlier years when ingredients were a somewhat smaller proportion of total costs.) Ingredient costs are driven by:

- a. The volume of food produced, and therefore the quantity of ingredients used. This is a function of the number of AWCs served and the benefits per AWC, the same factors discussed above under revenue drivers.
- b. The unit price of each ingredient, which is influenced both by the selection of specific ingredients and the source of purchase for those ingredients, e.g. PDS or the open market.
- c. The ratio in which ingredients are mixed and their relative production wastage rates.

Table 8: Cost of Ingredients per Kilo³⁶

Type of Ingredient	Average	Low End	High End
Wheat, MP (at PDS) ³⁷	4.89	4.71	5.22
Soya, MP	13.35	11.39	16.00
<i>Moong dal</i> , MP	34.47	30.09	37.74
<i>Jowar</i> , AP	7.42	6.87	8.35
Bengal gram, AP	28.80	23.00	36.58
Ground nut, AP	29.36	26.81	33.62
Sugar, AP	18.37	16.96	19.17

MP is the only state visited during this assessment in which ICDS is taking advantage of the PDS subsidy for grains. The DFMs in MP are receiving PDS subsidized-wheat at a cost of Rs. 4.71 per kilo. (The DFMs take demand drafts from bank, and the cost of the draft is included in the cost of wheat, as shown in Table 8, which is why the wheat cost appears to range from Rs. 4.71

³⁶ These data are based on all data (3 years when available) for all sample DFMs.

³⁷ The DFMs take demand drafts from the bank, and the cost of the draft is included in the cost of wheat, which is why the wheat cost ranges from Rs 4.71–5.22 per kilo in this table. The actual price paid for the wheat itself is Rs 4.71 per kilo.

to 5.22 per kilo.) The cost of wheat on the open market ranged from Rs. 9–10 per kilo at the time of the assessment, so the PDS subsidized rate was cutting the cost of wheat in half for the DFMs in MP.

This convergence between ICDS and the PDS is clearly of value to ICDS and the DFMs. All other ingredients are being purchased in the open market in all three states. This means that neither ICDS nor the DFMs are able to take advantage of the FCI subsidies through the PDS. In AP, we were told that it was not possible for the DFMs to access the PDS because it was only set up to provide to its own designated BPL program participants. However, AP could create an arrangement similar to that made through the Madhya Pradesh Civil Supplies Corporation under the Wheat-Based Nutrition Programme (briefly described above in the introduction and background section); there is a similar program for the states where rice is a more popular food. In Bihar, we were told that the PDS was not used because the quality of the food offered through the system was poor. While the quality of the food offered by the PDS might be a little lower, it is also the case that using the PDS would be a mechanism that avoids the type of corruption that is an easy temptation when the open market is being used, as is obvious in Bihar. Because quality variances in basic commodities, such as wheat and rice, are unlikely to be of major concern for the SNP, ICDS should examine this issue closely and consider the implications both for program costs and for corruption³⁸.

The selection of ingredients and the ratios in which they are used change the cost drivers. For example, the price of *moong dal* is nearly three times as high as soya, so this change in the selection of ingredients had a major influence on costs when MP shifted from soya to moong dal. Because of its high protein content, soya could be mixed with wheat in a 1:9 ratio and meet the ICDS protein requirements. However, to obtain the same protein content, moong dal needs to be mixed in a 1:3 ratio. Since *moong dal* is both more expensive per kilo and must be used in much higher proportions, there was a double impact on costs when MP made the shift. The reason for this change was apparently that the ICDS-supported DFMs did not have equipment to properly steam soya, ensuring that the protein could be properly digested.³⁹ This policy shock is examined below in the section on equipment and machinery as well as the break-even analysis section.

3.2.2. Production Wastage Costs

Different ingredients also have different wastage rates during the production process (depending on the complexity of the processing), and some ingredients are at greater risk of spoilage during storage, particularly if they are stored for any length of time during the monsoon season. For wheat, which is being sorted to remove impurities and then ground, the wastage rate is particularly high. In MP, ICDS sets a maximum allowance of 18% as a wastage rate for processing wheat. This standard was set because the wheat is obtained through the PDS and the full quantity procured must be accounted for by ICDS; no similar standards had been set in the other states visited. For *moong dal*, which is simply mixed with other ingredients with no further processing, the loss is negligible, which makes a small contribution to off-setting the higher cost of *moong*

³⁸ As discussed below, there is some corruption within the PDS that impacts the DFMs when they receive underweight bags. However, this is not significant compared with the striking difference in the purchase price.

³⁹ In MP, stakeholders reported that children did not like the taste of the soya, but this might have been because it had not been properly processed. Data for the 6 new recipes are not yet available.

dal and the higher proportions of it that are required compared to soy. There is also minimal production loss for other products that are simply mixed together, with no real processing. However, all products can experience some loss during storage, and some are more susceptible than others. For example, *jaggery* can easily become infested with insects (ants) or melt due to moisture and change color, making it unsuitable for use in the AWC.

Type of Recipe	Average	High end	Low end
Wheat and Soya mix (MP) ⁴¹	18.8%	20.5%	13.9%
Wheat and <i>Moong Dal</i> (MP)	16.4%	19.6%	13.1%
Ready-to-eat – RTE (AP)	5.1%	5.6%	2.4%

The cost and stability (or potential wastage) of ingredients should be taken into account in considering which recipes to use, especially if there is no hard evidence that changing a recipe will actually have a positive impact on malnutrition or other expected program benefits.

Since this cost element is so basic to the DFM break-even analysis, the break-even scenarios given below begin with three different analysis of basic recipes considering the costs and wastage rate for ingredients and the price that ICDS is paying for finished products.

3.2.3. Labor & Outside Grinding Costs

The costs of labor are driven by: 1) the amount of food that is being produced, and 2) the degree of sophistication in the production process. If grain is cleaned, ground and roasted, this involves much more labor than if products are only mixed together, as they are in the current Bihar model. In addition to paying their members as laborers, the DFMs sometimes need to pay for outside labor and/or pay to have grains ground outside their own operating unit. This occurs when there are surges in demand and/or when the equipment does not have adequate capacity. Surges in demand were occurring in locations where the DFMs were only delivering food every 2 to 3 months, and this problem might be rectified if the deliveries were more frequent.

Based on our sample of DFMs, it appeared that a DFM servicing more than 50 AWCs needed to rely on some outside labor as well as outside grinding in order to meet production requirements. For example Jyothi Jawali in Babai block, Adarsh in Pipiriya block, Bhavalaxmi in Papiriya block and Jyothi Singhpur in Babai block used an outside flour mill for grinding, as well as some

⁴⁰ Data for wheat and soya mix relevant for 2004-05 only. Data for wheat and *mung dal* relevant for 2006-07. There is not yet any comparable data for the new 6 recipes in MP. Data for RTE food in AP is for the full period, but less processing is done in the AP DFMs.

⁴¹ In addition to the production loss, there is also a loss due to a form of corruption or poor controls within the PDS. DFMs apparently often receive underweight bags from the PDS. What should be a 100 kilo bag of wheat may be as much as 4 to 8% underweight when the bag is removed and the actual grain is weighed, and this "loss" is incorporated into the processing losses in Table 9. Such losses are apparently not a problem with purchases in the open market; however, the same type of thing is bound to be happening in Bihar where the AWW is reporting on the amount of grain she purchased and the price of the grain, as purchased in the open market.

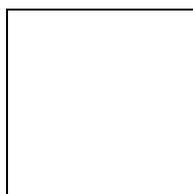
outside labor. These four DFMs are supplying more than 50 AWCs and spending from Rs. 10,000 to 84,000 per annum on outside grinding. The Jyothi Jawali DFM did not own machinery, and it spent Rs. 50,040 in 2004-05, Rs. 84,022 in 2005-06, and Rs. 59,880 in 2006-07 on outside grinding. It recently purchased a pulverizer-cum-flour-mill with a 10hp electric motor for Rs 120,000. The women appeared to have made a well-considered decision in making this investment.

These observations on production capacity are based on a limited sample of DFMs, and should be viewed with caution. The investment in the equipment of these DFMs was less than has been the case with some other models. For example, the model set up by the WFP in MP⁴² entailed a larger investment in heavy-duty machinery and can include a larger pool of women workers (as needed) drawn from multiple SHGs that are part of the cooperative.

DFM Group	2004-05	2005-06	2006-07
Vinganga, Keolari Block, MP	171	177	151
Bainganga, Seoni Block, MP	128	130	113
Adarsha, Papiriya Block, MP	198	197	171
Bhaivalaxmi, Papiriya Block, MP	212	211	197
Jyothi Jawali, Babai Block, MP	242	245	216
Jyothi Singpur, Babai Block, MP ⁴³	NA	NA	42
Sri Rajarajeswari, Sirisilla Block, AP	162	170	195
Arunodaya, Vemulawada Block, AP	184	184	179

Table 10 summarizes the average number of days worked per year by members of each of the DFM Groups we studied. Each group member is working somewhere between 113 and 245 days, and this suggests that — on average — there appears to be excess labor capacity within the groups that are operating the DFMs. The DFMs visited during this assessment had, on average, approximately 10 members.⁴⁴

Figure 5: Trends in Working Days per Year, AP and MP



⁴² Again, the assessment team did not directly observe the WFP model, but discussed it with WFP/Delhi officials and reviewed related current (2007) documentation.

⁴³ DFM started in January, 2007.

⁴⁴ Six DFMs had 10 members each, one had 11 members, and one had nine.

Both Table 10 and Figure 5 indicate that the number of days worked by DFM members in MP has declined over the past year, while the number of days worked by DFM members in AP has risen. The wheat and soy mix recipe that was originally produced in MP required more labor for production than the wheat and *moong dal* mix, which requires processing of the wheat but not the *moong dal*. However, this is not the major explanation for the decline in the number of days worked, as the amount of food produced also declined in MP as the DFMs lost nearly 39% of their market share to Agro Foods when it took over the provision of weaning food. In AP the amount of food produced rose, as more food was provided to program participants.

DFMs are using different ways of paying their members. The women track their time, and may pay themselves as laborers, or they may distribute profits (full profits or some portion) based on the proportion of time each member worked, or they may use some combination of these two approaches. In the six MP groups studied, while methods differed, the women were aware of the need to manage their funds and reserve savings (either for future investments or to make loans on which they can earn interest). In the two AP groups studied, where the women have not benefited from the convergence with SGSY that provides training in financial management and planning, the DFM groups were distributing all of their profits (on a cash basis) as what is called Mothers' Honorarium (based on proportionate member's working days) every month. They were not maintaining any reserves, including for the future replacement of equipment, or for loans and investments.

3.2.4. Transportation and Member Travel Costs

Average transportation costs for the DFMs ranged from 1.3 to 6.7% of total costs. Transportation costs vary based on: 1) the distance that the DFM members need to travel both to obtain their raw materials and to deliver the finished products to the AWCs; 2) the number of times they need to make deliveries to AWCs during a month; 3) the number AWC they deliver to; 4) the need to go to the bank, and 5) other needs, such as general meeting trips for members and travel to have machinery break-downs repaired, etc. The policy being implemented in MP to provide six recipes a week should have a major impact on transportation costs; also the kind of packaging needed for some of the recipes (e.g. the rice balls) will complicate transportation significantly, as compared with the sacks of powdered food that have been used in MP and are used in the other states. The need to collect funds from each AWC in MP will also increase transportation costs.

Table 11: Transportation Costs

DFM Group	AWCs Served	Annual Average Transport Cost (Rs.)	% of Total Cost	Per AWC (Rs.)
Vinganga, Keolari Block, MP	30	50,501	6.1%	1,683
Bainganga, Seoni Block, MP	20	26,642	4.6%	1,332
Adarsha, Papiriy Block, MP	64	59,903	5.8%	936
Bhaivalaxmi, Papiriy Block, MP	54	62,815	6.7%	1,163
Jyothi Jawali, Babai Block, MP	96	104,643	5.0%	1,090
Jyothi Singpur, Babai Block, MP	49	17,904	3.7%	365
Sri Rajarajeswari, Sirisilla Block, AP	49	14,263	1.3%	291
Arunodaya, Vemulawada Block, AP	37	14,252	1.6%	385

As shown in Table 11, average transportation costs ranged from 1–7% of total costs for the DFMs studied. The Adarsha, Bhaivalaxmi and Jyothi, Jawali DFMs are serving more than 50 AWCs, and are experiencing the highest proportion of transportation costs. The two DFMs in AP had negotiated free transport from the vendors whom they purchased their ingredients from, and this is why their transportation costs are so low. They also had no loading costs, which are apparently high in MP. This seems to illustrate that the DFMs had developed good negotiation skills; however, since offering transport is also a marketing strategy that allows vendors to sell in larger volume and/or at higher prices, we can only report on how the DFMs saw this negotiation, as we were unable to explore the relationship between prices paid for ingredients and transportation costs with available data. The AWCs served by the DFMs in AP are very close to the DFM Sites, with a maximum distance of 20 kilometers, and the availability of transport is very good for the AP DFMs.

3.2.5. Costs of Electricity and Other Fuel

Electricity and other fuel cost are minor, contributing from 0–3% of total costs. Electricity costs varied based whether the DFM was using a domestic connection or commercial connection.

Table 12: Annual DFM Electricity Costs (in Rs.)
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Group Name	Average		Low end	High end
	Amount	% of total cost	Amount	Amount
iVinganga, Keolari Block, MP	7,099	0.9%	6,304	7,757
Bainganga, Seoni Block, MP	5,517	1.0%	2,625	7,879
Adarsha, Papiriy Block, MP	4,293	0.4%	1,690	5,840
Bhaivalaxmi, Papiriy Block, MP	15,550	1.7%	13,968	17,187
Jyothi Jawali, Babai Block, MP	NA	NA	NA	NA
Jyothi Singpur, Babai Block, MP	NA	NA	NA	NA
Sri Rajarajeswari, Sirisilla Block, AP	2,436	0.3%	1,669	2,822
Arunodaya, Vemulawada Block, AP	14,877	1.7%	12,334	17,149

the Bhaivalaxmi and Arunodaya DFMs have a commercial connection and pay significantly higher rates than other DFMs, most of which are operating inside a member's house where the connection is classified as domestic and charged at a lower rate. If the DFMs are using an outside grinding service, this reduces the cost of electricity, which is why the two DFMs in Babai block have no electricity costs, as shown in Table 12. The Papiraya block DFMs are using an electric generator whenever the electricity is shut down, and they are paying 200–300 Rs per day for this. In AP, the DFMs are purchasing firewood to roast the *jowar* and groundnut. In MP, some of the DFMs had been purchasing firewood to boil the soy.

3.2.6. Banking Transaction Costs and Interest

Bank transaction costs, interest paid for bank loans, demand draft charges, and bank commission and interest paid to outsiders ranged from 0 to 3% of total costs for the DFMs studied. During the initial year in MP, banks charged a commission when DFMs were cashing checks; ICDS officials then successfully negotiated with the banks and the commission was eliminated. As mentioned above in the section on ingredients, the MP DFMs need to pay bank charges for demand drafts used in the purchase of wheat from the PDS. In some rural branches, banks do not have authority to give more than Rs 50,000 per demand draft. The DFMs therefore need to take 2–4 demand drafts, increasing their charges. Banking transaction costs increase proportionally with the number of transactions that the DFM needs to make. For example, if the DFMs in MP need to invoice each AWC in the future (as is the current intention), this would increase bank transaction (and transportation) costs for the DFMs, with no apparent advantage to the DFMs, the AWCs, or ICDS.

The DFMs in MP were linked to banks either with an SGSY loan or line of credit for Rs.200,000. DFMs could use the line of credit whenever they required money. For those DFMs that have borrowed funds, although the loan itself may be subsidized both through the principal obtained and the interest rate, they have had interest charges for an extended period. Some of these DFMs have taken loans from outsiders or are receiving their ingredients on credit. For example, the Vinaganga DFM took several loans from outsiders including loans where an individual member's jewelry was used as collateral. The need for these short-term loans was for working capital because of delays in payments from ICDS. On the other hand, some DFMs in MP are

earning interest on loans made from their own savings, e.g. Adarsha and Bhaivalaxmi from Papiariya block.

Some of DFMs (e.g. Jyothi Jawali, Bhainganga and Bhaivalaxmi) in MP are using both an SHG bank account and a DFM account in order to better maintain separate accounts for the DFM. This is one of many indications that the MP DFMs have much more developed financial planning and management skills.

In AP, the DFMs have a special arrangement that provides them with advance payment from ICDS so they have not needed to take out loans for either the purchase of equipment or working capital. Bank transaction costs and interest are nil in AP. However, this is not an arrangement that could be part of replication or scale-up because ICDS would not, apparently, be able to make the same advance payment arrangement for an entire state. This was only possible in a small pilot experiment. The capital investment in equipment would not benefit from a subsidized loan, and paying for the full purchase of equipment (as CARE arranged to do itself in AP) is not a financial burden that ICDS could undertake. Perhaps most importantly, the arrangement in AP has not encouraged the development of good financial planning and management skills with the AP DFMs.

3.2.7. Rental Costs or Amortization of Facilities

Rental costs are generally a negligible component of total operating costs. Half of the DFMs studied are using a group member's home (usually the group leader) and pay little if any rent. The remaining DFMs rented houses to run the DFM operations. In AP, the two DFMs have rented good buildings, one for Rs. 200 and the other for Rs. 750 per month. In one exceptional case, the Geeta Mahila DFM in MP had purchased its own land and constructed a building on the site which served as their production facility, as well as a space for meetings, etc.

3.2.8. Capital Costs of Equipment, Depreciation and Maintenance

The capital investment in equipment for DFMs varied widely, and this investment influenced the variance in the costs of outside labor and grinding, as well as their capacity to produce. Capital costs for equipment include five to six items required for starting up the production unit. Four of these are indispensable: 1) the pulverizer, or the pulverizer-cum-flour mill; 2) electrical motor; 3) bag sealing machine; and 4) weighing machine. DFMs also purchased (or received) other hygienic equipment (e.g. protective face masks), storage bins, etc. Table 12 summarizes the investment in machinery in MP versus AP. Especially when one considers that the equipment for MP was generally purchased at an earlier period (and there should have been some inflation in costs by the time equipment was purchased for AP), the investment in equipment for AP was much lower. The biggest difference in investment was for the first two items: the pulverizer-cum-flour mill versus the simpler pulverizer and the electrical equipment.

As mentioned above in the section on the number of AWCs served, the WFP-supported DFM in MP has been serving 162 AWCs. This model, which benefited from greater investment in heavier duty equipment and machinery, has apparently had no difficulty with maintenance and repair of equipment, according to the WFP representative in New Delhi. CARE's experience with the DFMs in AP was described as illustrating the need for training in proper maintenance and repair

of equipment as part of the start-up process for establishing DFMs, because there were many problems with the equipment during the initial period. However, the experience may also have illustrated that a larger investment in heavier equipment is appropriate. It appears that the DFMs launched by CARE in MP did not suffer from the initial difficulties with equipment maintenance and repair that those in AP experienced. Especially given that one of the major problems with equipment in AP was overheating, these data (while not conclusive) suggest that more robust equipment is a worthwhile investment.

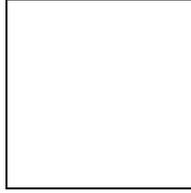
The DFMs in AP were given the equipment by CARE, while most of the DFMs in MP had purchased the equipment with subsidized loans arranged through SGSY. This probably made the members of the DFMs in MP much more conscious of the value of the equipment and the need to maintain it properly. Obviously the subsidized loans through mechanism like that used under SGSY in MP made more substantial investments in equipment more feasible, and they probably also gave the women operating the DFM a stronger sense of the value of the equipment they had financed themselves.

The women running the DFMs in MP have learned lessons about equipment investment. The Bainganga DFM in Seoni block purchased machinery in March of 2004 for Rs. 86,000 through a bank loan. The Jyothi Jawali in Babai block, one of the most profitable DFMs that is supplying the highest number of AWCs, very recently (April of 2007) purchased a higher capacity (10hp) machinery set for Rs.150,000, using Rs.110,000 from their own savings and Rs. 40,000 on credit. If their financial management skills are good, DFMs should be retaining savings so that they will be able to invest in new equipment as the old equipment wears out. While the DFMs in MP, which were built on self-help platforms, are building savings, those in AP are paying out all earnings monthly, and not retaining any savings that would provide for them to purchase new equipment.

Table 13: Average Total Investment in Machinery (in Rs.)

Type of Equipment	Madhya Pradesh	Andhra Pradesh
Pulverizer-cum-flour mill or Pulverizer	56,000	14,000
Electric Equipment & Fittings	8,000	1,500
Bag Sealing machine	3,600	3,700
Weighing machine	5,400	3,200
Other: hygiene kit, storage bins, etc.	5,100	1700
Total	78,100	24,100

Maintenance and repair of equipment is a minor operating cost for the DFMs. The average cost has been under 1% of total costs, but the costs fluctuate based on the amount of investment in equipment and the age of the equipment. Those DFMs that are better equipped – in terms of the type of equipment and how robust it is – are spending less on outside labor and grinding, which in some cases had reached nearly 10% of total costs for certain DFMs in earlier years, and is much higher for those DFMs that were not well-provided with equipment. Typically, as shown in Figure 6, this cost rises as the equipment ages, which is why the women operating the DFMs need some sense of the need for considering financial depreciation and the need to save toward the replacement and/or upgrading of equipment.

Figure 6: Trends in Maintenance and Depreciation Costs for Machinery**3.2.9. The Bihar Exception — Costs**

The current Bihar model is not a food production enterprise. The AWWs purchase already ground and ready-to-cook ingredients, basically products similar to those produced by the women operating the DFMs in AP and MP. Each AWC currently receives Rs. 5,302.50 per month from ICDS based on the Formula shown above in Table 6, and they report the equivalent volume of services provide, regardless of actual activity. The only local financial records are the bank book, which simply shows the funds received, and the same amounts being withdrawn. There is apparently no other record-keeping requirement related to the use of these funds, such as receipts, vouchers, etc. Presumably, the funds provided to the AWW set an upper limit on what she will spend purchasing and providing the food, but there is no way to determine actual program-related expenditures. There are no performance or cost reduction incentives, and no value added to the food processing aspect of the SNP.

3.3. Recipe Scenario Break-Even Analysis and Policy Shocks

In the AP and MP DFMs, all of the above variables influence the financial viability — or break-even analysis — of the DFMs, and their relative impact is explored in the scenarios provided here.

In the Bihar DFM, these variables are not at play. The AWW is receiving funds that she controls, and there is no variability in her monthly revenues. She does have some control over costs — and there will be both incentive and external pressure for her to misuse or divert funds in many situations — but her costs will not exceed her revenues, because the funds she receives from ICDS are her only source of funding. (The SHGs can tap into their own savings and loans as a source of funding.)

Although other revenue and cost drivers can have a critical fine-tuning influence on break-even, the price paid by ICDS is the critical revenue driver (representing over 90% of revenues) and the cost of the basic ingredients is the most critical cost driver (currently representing around 90% of the costs – see Table 14). Therefore, the most important aspect of financial viability is: what's cooking.

As ICDS changes the recipes that the DFM Groups must use to prepare food, this changes both the cost of the food and (in most cases) the price ICDS pays for the food per kilo or per program participant. The following figures illustrate the impact of the changes in “what's cooking” that have taken place (or are currently taking place in MP. These are then contrasted with AP.

Figure 7 and 8 illustrate the impact of the shift in MP from the wheat and soya recipe to the wheat and *dal* recipe. The per-kilo price that ICDS paid the DFM rose from Rs. 11.50 to 15.50. However the cost of the ingredients rose proportionally more than the price rose. In the comparison between Figure 7 and Figure 8, we have included the relative wastage rates into the cost of the ingredients, so that the lower wastage rate of dal (which is only being mixed by the DFMs and not processed) and the higher wastage rate of soya are reflected in the comparison. The other costs (Rs. 2.02 per kilo) are an estimate, based on the overall experience of the sample DFMs, that is kept constant in the comparison between Figure 7 and 8. Many of these costs are fixed or semi-fixed, and were not likely to rise or fall significantly in the shift from the wheat-and-soya recipe to the wheat-and-dal. Inflation might have made them a little higher, but the substitution of dal for soya might have decreased labor and electricity costs a little.

The major implication from the comparison of these two recipes is that, despite the increase in the price paid by ICDS, the break-even analysis for the DFMs went from a gross margin of Rs. 2.08 (18% of revenues) per kilo to a negative 50 paise per kilo. Since these figures do not take depreciation into account, this means that the loss with the new recipe was even greater.

Figure 7: Cost Analysis of Wheat and Soya Recipe

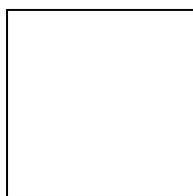
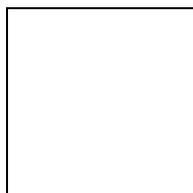


Figure 8: Cost Analysis of Wheat and Dal Recipe

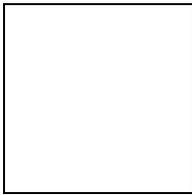


Based on our analysis of the DFMs in MP, we understood that they could only break-even with the wheat and dal recipe through their other earnings from the sale of by-products or interest on investment, and/or by paying themselves less for labor. The policy shock created by this recipe change had critical reverberations for the DFMs and, at least according to what we understood from the group members, it seemed that the policy decision to give a contract to the Agro Industries for the weaning food, which effectively diminished the market for the DFMs by approximately 39%, occurred within a few months of the shift in recipes, creating a double policy shock for the DFMs.

By contrast, the puffed rice balls — one of 14 different recipes that are now among the choices that can be made under the six-recipes-a-week policy in MP — offer a gross margin of 0.84 Rs (3.3% of revenues) per kilo according to the analysis presented in Figure 9. (This was the only recipe being prepared at the time of our visits, and for which we were able to gather cost data.) For this scenario, we have increased the estimate for other costs to Rs. 4.5 based on estimated

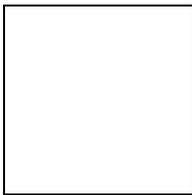
increases in transportation and banking costs under the six-recipes-a-week plan. With the bagged powdered food, deliveries could be once a month or less frequently, and the DFMs collected their payment from the district offices once a month until the end of March 2006, when they began collecting checks from the block office once in a month. With the six-recipes-a-week plan, deliveries will need to be much more frequent, packaging and transport will be much more awkward and expensive. The DFMs are also expected to collect payment directly from the AWWs, as the cash and budget for food is being transferred to the AWW as part of a new set of policies. The processing to make the rice balls is also more labor intensive, in that each ball needs to be rolled individually, and this recipe is much more difficult in terms of assuring standards. The balls we saw in one DFM were larger than cricket balls, while those in another DFM were just a little larger than billiard balls. Both these rice balls and small crackers we saw, which were also among the 14 recipes, were much more fragile than the powdered food in bags which could be loaded onto the back of an oxen cart or a truck and trundled over very rough roads with no harm to the food. In summary, it seems unlikely that such recipes will be cost-effective, and they are highly likely to completely undermine the financial viability of the DFMs.

Figure 9: Cost Analysis of Rice Ball Recipe



By contrast, ICDS is providing a fairly lucrative price to the DFMs operating in AP where CARE has set up the pilot DFMs. As shown in Figure 10, ICDS is paying Rs. 22.35 per kilo for the food produced by the DFMs in AP. Their ingredients (which consist of jowar, ground nuts, Bengal gram, and sugar) cost Rs. 16.10 allowing for a 5% processing loss for all ingredients. Using the same other costs factor (Rs 2.02 per kilo) that we used for the recipes in Figures 7 and 8, this give the DFMs an average gross margin of Rs. 4.23 per kilo (or 19% of total revenues). Given the price being paid by ICDS in AP, this particular recipe for powdered food is therefore the most lucrative of the four recipes analyzed here.

Figure 10: Cost Analysis of Recipe used in Andhra Pradesh



3.4. How ICDS Policies Can Undermine Financial Viability

As the above analysis of “what’s cooking” recipes indicates, the ICDS pricing and basic recipe requirement for the DFM pilots launched by CARE in AP is much more supportive of the financial viability of the DFMs in that state than the current and recent ICDS policies that have been

implemented in MP. Table 14 and Figure 11 highlight the dramatic decline of what otherwise appear to be robust DFMs in MP as contrasted with those in AP.

Although the women operating the DFMs in AP do not have the same entrepreneurial or financial planning and management skills as those in MP, and they are not managing their funds as skillfully the DFMs in AP are more robust in terms of financial viability simply because they are operating under ICDS policies that promote their financial viability. Although they were less profitable during the initial year, the prices paid by ICDS for the food they are providing amply reward them for their labor and the costs of producing the food. ICDS is also providing advance payment which frees them from the need to save to provide working capital for the DFMs.

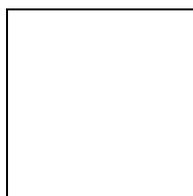
Table 14 and Figure 11 illustrate the steady rise in revenues in AP, as the DFMs earned first Rs 1.35 per program participant through July of 2006 and then Rs.1.90 per participant from August of 2006 to accommodate the increase in costs for their ingredients. There were essentially three reasons for this increase in profits:

- Beneficiaries increased so total profits increased since there is a profit per beneficiary.
- As beneficiaries increased, groups were able to exploit economies of scale, increasing the profit per beneficiary.
- The rates paid by ICDS increased.

By contrast, in MP — the state with the largest number of DFMs (because the DFM has been scaled up to cover the entire state) — ICDS policies have been steadily undermining the financial viability of the DFMs. Despite the increase in price that was given to the DFMs with the switch from soya to *moong dal*, total revenues declined sharply between FY 2005-6 and FY 2006-7 because approximately 39% of the market share for the DFMs was handed over to Agro Industries Corporation when they were contracted to supply *panjeeri*. At the same time — even with a major decline in volume because of the loss of market share to Agro Industries — the shift from soya to *moong dal* caused their costs to rise and profit margins to decline. By FY 2006-7, the revenue line is barely above the cost line for the DFMs in MP. The costs here do not include wages or profits distributed to the women, nor do they include an allowance for the depreciation of the equipment that the women who created these SHGs have purchased using their own savings and loans. It would seem that ICDS in MP has been unwittingly and slowly undermining the spill-over benefits that it created through the network of SHG-based DFMs that it scaled-up throughout the state, as these womens' groups change from viable to failed economic enterprises.. The latest policy shock — the six-recipes-per-week — is likely to completely undermine the DFMs in MP because of the combination of a sudden change in the sophistication of the processing required and the associated costs.

Table 14: Average Financial Picture of DFMs in MP and AP⁴⁵ (in Rs.)						
	Madhya Pradesh			Andhra Pradesh		
	2004-05	2005-06	2006-07	2004-05	2005-06	2006-07
Profits/Losses	290,749	319,489	126,105	88,888	49,345	262,091
Cost of Ingredients	581,987	916,263	985,729	603,078	930,864	1,161,740
Other Costs ⁴⁶	127,192	166,004	113,453	41,877	43,361	48,681
Total Cost	709,179	1,082,266	1,099,182	644,955	974,225	1,210,421
Revenue from ICDS	957,715	1,334,502	1,163,220	729,988	1,020,310	1,468,182
Other Revenue	42,213	67,253	62,068	3,855	3,260	4,330
Total Revenue	999,928	1,401,755	1,225,287	733,843	1,023,570	1,472,512

Figure 11: DFM Annual Revenue & Cost Trends in AP and MP



There are other ways in which ICDS policies can undermine financial viability. A decision, for example, to “spread the wealth” by spreading a number of AWCs between a larger number of DFMs can mean that none of the DFMs are breaking even or providing sufficient profit to make them worthwhile to the women operating them. A decision to reduce the number of AWCs that the DFMs serve has a similar impact to the decision to contract out the *panjeeri*: the market for the DFMs is reduced, along with their revenues and potential earnings.

3.5. Future Considerations and Potential Shocks

We had originally intended to include some hypothetical break-even scenarios as part of this report in order to show readers how various factors — e.g. the number of AWCs served, the volume of food per AWC, etc. — could impact the financial viability of the DFMs. However, we decided that this was unnecessary and, more importantly, might distract attention from the reality of the lessons that should be learned from recent experience, particularly the policy decisions that have been taken in MP over the past two years. While the number of AWCs served or the volume of food per AWC are important variables in the factors that influence break-even and one can develop different break-even scenarios to illustrate their impact, along with the impact of other factors (e.g. investment in equipment), by adjusting underlying assumptions, the simple fact is that the cost of the basic ingredients in a recipe and the price paid by ICDS for that recipe have either not been properly calculated by ICDS in establishing the price it will pay for DFM-

⁴⁵ As explained in the text, the cost figures presented here do not include wages or profit distribution to the women, or an allowance for depreciation. Data shown is for the DFMs assessed in each state.

⁴⁶ This excludes member wages or profit distribution as well as depreciation.

produced food, or the implications have been ignored. It appears that in MP policy-makers have not been very concerned about the financial viability of the DFMs. Paying attention to the financial viability of the DFMs should be an essential consideration in formulating any policies as ICDS decentralizes the SNP.

This issue will arise again, both as MP moves forward with the six-recipes-a-week policy, and as states consider how they will respond to a mandate to fortify the SNP with essential micronutrients. This could be handled as a recipe change, whereby the DFMs would add micronutrients to a basic recipe, or it can be handled through a parallel program, such as the fortified candies, provided with support from the Micronutrient Initiative, that Bihar is currently distributing. During our meetings with the Micronutrient Initiative representative, he saw the DFMs as being a more reliable mechanism than vendors are for ensuring that fortification is done properly (as compared with vendors), and there were several possibilities discussed for incorporating fortification into the DFM's activities. While the selection of an approach to fortification would depend heavily on the actual model being implemented, the MI representative felt that fortification at the DFM level was both feasible and desirable using any of the major current fortification strategies. However, vendors and/or state corporations may argue against this possibility, and use any fortification mandate to lobby for an increase in their own role, diminishing the role of the DFMs, and consequently weakening them.

There are other factors, which cannot be predicted now, that could influence the future financial viability of the DFMs. Therefore, what is most important in terms of both policy formulation and/or advocacy is that all key players — whether they are ICDS state-level officials or women active in the DFMs and their federations — understand both the obvious and the more subtle factors that can impact financial viability.

4. OPERATIONAL FEASIBILITY

Note: key topics covered in this and the following chapters are summarized in Exhibit 1 (located at the end of the Executive Summary), the matrix on the Advantages and Disadvantages of both decentralized and centralized food models.

The DFMs we studied in all three states were clearly operationally feasible, as all three models had been and still were operating. Therefore, the questions about operational feasibility relate to how well these DFMs were operating and whether the incentives (including non-monetary incentives) were sufficient to maintain their operational feasibility. This chapter of the assessment examines the extent to which DFMs in the different states: a) make acceptable food available to program participants; b) reduce levels of corruption in the SNP; c) facilitate community ownership and use of local resources; and, d) have the highest potential for building up women's social and political capital, in addition to the economic benefits discussed in the previous section. The impact on women is critical because two of the three key factors identified as explaining the so-called "Asian Enigma" (Ramalingaswami et al 1996) are: low-birth weight (and therefore the nutrition of pregnant women), and the status of women. Therefore, in order to maximize its impact on malnutrition ICDS needs to pay attention to P&L women as program participants, and the program's impact (in part through the establishment of DFM Groups) on the status of women.

Certain topics related to operational feasibility are not discussed in this chapter. These include: access to ingredients, transportation of food to AWCs, availability of electricity, storage of food, storage of equipment, quality control systems, etc. Some of these topics are more closely related to financial viability and are therefore covered in the previous chapter. For example, shortages of electricity mean that DFM groups sometimes need to rent generators, adding to their costs, and more frequent deliveries of different food recipes increase transportation costs. Other topics appear not to be of significant relevance to operation of the DFMs. For example, neither equipment storage nor quality control was ever mentioned by any stakeholders, neither by women operating the DFMs nor by ICDS staff working with the DFMs. Despite our asking the question repeatedly, for example, there was never a suggestion that women operating the DFMs faced difficulty accessing raw ingredients. Furthermore, the motivation of key stakeholders is absolutely crucial to the operational feasibility of the DFMs. While the potential financial benefits are perhaps most effective in inspiring motivation within the DFM, there are other factors that influence motivation and they are also covered in this chapter.

In Bihar the current DFM is simply another task for the AWW — as an employee of the state — with some minimal community input. As described earlier, ICDS in Bihar has itself decided that the current model should be replaced and it is in the process of piloting a new model, which will incorporate some aspects of the other models, and involve members of women's or Self Help Groups as paid workers in "Community Kitchens".

In AP and MP, the DFMs constitute a service being provided by women as non-state actors in the form of a business which needs to be sustained economically. Therefore, the operational feasibility of these DFMs is intrinsically linked to the economic viability of the models, which, as described in the previous chapter, is affected by policies made by the state (as well as other fac-

tors). These policies influence empowerment at the local level (particularly of women), including the sense of ownership of the DFMs (by women), and the policies play a critical role in the effectiveness of the “decentralization” of the food models.

The larger trend towards decentralization of governance in India serves as a backdrop to the development of DFMs. The Supreme Court order on decentralization of the SNP procurement-should therefore be viewed in the context of — and in keeping with the spirit of — decentralization nationally. In requiring a move away from the SNP vendor-based model towards community groups, the order is calling for greater community ownership. One of the criticisms of decentralization is that when power comes down to local levels it can simultaneously fall under the control of local elites and foster corruption at lower levels. However, decentralization, in its true sense, should allow for community ownership, greater levels of local accountability to the community, and community monitoring and control over local resources and programs. Decentralization also implies better use of local resources and tailoring programs to local tastes. Ideally, decentralization will facilitate the building up of social, economic and political capital of local communities, and of the poor in particular.

In addition to issues around decentralization, two other overriding factors influence operational feasibility and its effectiveness: the degree of convergence among government departments and the enabling environment that the government creates for the DFM, both nationally and at the state or local level. Since these topics are dealt with in a subsequent chapter, they are not discussed here.

4.1. Acceptability and Availability of Food

The most important aspect of the DFMs in supporting the SNP is making food of acceptable taste and quality available to the local communities. In AP and MP DFMs the small women’s groups were able to ensure better availability of food and food tailored to local tastes. The SHGs formed by government departments such as PR&RD in the SGSY program are economically driven groups and have a strong financial stake in the smooth running of their businesses, as their livelihoods depend on the renewal of their contracts, which in turn depends on the quality of service and food provided.

The acceptability of the food provided was high in all three states — this despite what was sometimes described by ICDS staff as the monotonous nature of the food. (The six-recipes-a-week policy was being tested and had not yet reached program participants in MP.)

The availability of the food was excellent in AP and MP and poor-to-fair in Bihar.

These results in MP and AP were largely the result of the availability of bank loans and their own savings within the SHG/DFMs, and/or the provision of credit to them by shop keepers which allowed the DFMs in MP to get raw materials before ICDS had paid them. In AP, there was very little fund flow disruption because of an exceptional agreement made for the CARE-supported DFM pilots which side stepped the typical fund flow mechanism from the treasury and provided funds to the DFMs 15 days in advance. This mechanism apparently cannot be scaled-

up, and the AP model would therefore not be able to assure a constant supply of food in a scaled up model, unless it is modified to allow access to loans and the encouragement of savings.

While there were improvements over time in availability of food in Bihar (because of improvements in cash flow), the availability of food for spot-feeding in the AWCs was not good, and the availability of THR was apparently very poor in most areas. The current Bihar model, while presumably catering to local tastes, is simply based on the AWW buying rice, lentils and vegetables with the funds she is given by ICDS. There is no processing of the food, and she may not be selecting food that has adequate calorie and protein content. The current model is run by an individual, not a group, and she does not have the credit linkages that allow her to avoid food disruption caused by cash flow problems in the government system.

4.2. Transparency and Reducing Corruption

All SNP models provide supplementary nutrition for program participants, but they do not all do so equitably or in a cost-efficient manner. Indeed, some SNP models are estimated to allow leakages of as much as 30 to 50 percent of resources, implying that much less food and/or a poorer quality of food reaches (and often does not reach) the targeted SNP program participants than resources have provided for.

The current Bihar model has almost no transparency and is known to have a high degree of corruption. There is marginal involvement of the communities through the local Food Procurement and Monitoring Committees which include mothers as members. These committees were described as being “rubber stamps” to the process. The funds are put under the control of the AWW, who is routinely expected to give some money to others, and she would naturally manage to keep some funds for herself, given that she is paid an honorarium of only Rs 1,000 a month and operating in a system where corruption is endemic. She buys the food, and controls records of how much food she purchased and the price she paid for it, so there is no transparency in procurement. She distributes the food to program participants, and records how much food she distributed and what categories of participant she distributed it to. This reporting is known to be totally unrealistic and completely lacking in transparency. There is a particularly low ratio of supervisors to AWCs in Bihar, and, according to some of those we interviewed, supervisors are reported to ask AWWs for payment when they sign off on their reports.

By contrast, the AP and MP DFMs have a high degree of transparency and have therefore minimized corruption. This is because SHG and Mothers Committees are operating the DFM Groups. SHGs formed by women's organizations (such as *Mahila Samakhya* which Bihar plans to work with under the new pilot) have a stake in ensuring transparency and less corruption in government programs and services. Such groups are inculcated with certain values and see the proper delivery of public goods and services as important for their communities. Equally or more importantly they are groups, which naturally creates greater transparency and diminishes the potential for corruption, both because the whole group would lose if something is amiss, and because there would have to be collective collusion to successfully carry out most potential forms of corruption.

4.3. Community Ownership and Use of Local Resources

Both the AP and the MP models also used local human resources because the women in the groups were processing the food, i.e. cleaning, roasting, grinding, mixing and packaging grains and other ingredients. This input of local labor means that the women provide ‘value added’ to the process, and the value they add strengthens their own sense of ownership and allows them to take pride in their contribution to the community — in addition to earning a living. The experiences in AP and MP have demonstrated that this valuable community participation is operationally feasible.

Although plans for scale-up, or even further piloting, are unclear in AP, there is discussion of a model that would only have women’s groups sourcing and delivering food commodities in that state, and not engaging in food preparation. This would reduce the role of the DFMs to retailers, and significantly change the dynamics in terms of both economics and ownership.

4.4. Social, Financial and Political Capital

We argue in this report that one of the most important goals of the DFM movement should be the empowerment of women at the grass-roots level, through their engagement in procuring, preparing, and distributing food as an economic enterprise. The experience in MP, in particular, has proven this to be operationally feasible.

Although the DFMs in Bihar have done nothing to build women’s social, political and financial capital, the women operating the DFMs in AP and MP have developed a significant degree of social and political capital.

These women now have a much greater breadth of contacts with whom they are able to effectively interact, including the shop keepers in the market from whom they buy ingredients, the AWCs whom they supply, *panchayats*, and officials from ICDS. “The supervisors in ICDS now give us respect,” said one of the women. “They give us a seat and talk to us well.” Initially the women did not even know where an ICDS office was located, nor did they know how to arrange for transport for supplies; now interactions with the marketplace and the government have become routine for the women members of these groups. This increased capacity has resulted in greater financial flows to women members through increased incomes, and in the case of MP, increased access to formal credit.

Not only had the women operating the SHG/DFMs in MP demonstrated their capacity to acquire more advanced financial management and entrepreneurial skills, they had also built more social and political capital than those operating the DFMs in AP because they had established relations with banks, PRRD (or SGSY), and the PDS.

However, the most important form of social capital built is in terms of the relationships women have built with other women. “We have strong relationships with each other,” said one of the women, “and we can help each other in times of emergency.” This group social solidarity, coupled with a rise in individual and group self-confidence, has given these women a voice in society, at both the community and state-level — although they will be more effective in lobbying at

the state level with federations. Women have begun to raise issues with their local elected representatives and in the public assemblies or the *gram sabha*. Discussing the types of issues raised, one *sangha* member said: “We asked the *gram panchayat* for land to set up our food processing unit, which the GP agreed to but the land allotted was far away, without any electrical connections. Therefore we decided to build our own office.” Women reported being able to interact effectively with government officials, and with other community members and leaders.

5. IMPACT OF DFM_s ON THE ICDS CORE PROGRAM

For this aspect of the assessment, the team considered the impact on ICDS in terms of administrative burden and related costs for ICDS, as well as the beneficial impact on the key ICDS program objectives. Exhibit 3 provides a summary of the burden placed on ICDS by the three models the assessment team studied, and what we anticipate the burdens will be of the planned Bihar pilot (as discussed in the final chapter of the report).

Exhibit 3: Summary Analysis of Burden Placed on ICDS Staff and Budget

<u>ACTIVITIES</u>	AP Mothers Committees	MP SHGs	Bihar AWCs	Bihar Planned Pilot
Establishing Group	High	Low (SGSY existing groups)	Low (Forming committees)	Medium (Existing MSB/WDC groups)
Training (SHG concept)	High	Low (SGSY existing groups)	Low (No training needed)	Low (Existing MSB/WDC groups)
Training in Financial management	Medium (but neglected)	Low (SGSY existing groups)	Low (No training needed)	Low (Existing MSB/WDC groups)
Training in Food Production	High	High	Low	High
Capital Investment	High (no state subsidies)	Low (SGSY loan and subsidy)	Low (No Investment)	High (no access to state subsidies)
Coordination and Management	Medium	Medium	Medium	High (Managing of community kitchens)
Monitoring & Supervision	Medium	Medium	Low: Garbage-in-Garbage-out	High (Monitoring community kitchens)
Burden on AWC worker	Low	Low	High	Low

5.1. Policy and Operational Issues for ICDS at the State Level

In view of the 11th GOI 5-year plan (GOI 2006) and their expanded mandate as specified by the Supreme Court, state-level ICDS officials in all three states were considering the policy and operational implications of: a) universalization of ICDS through the expanded reach of AWCs, and b) shifting from a vendor-based model to a DFM, albeit with the DFM defined differently in each of the three states. ICDS officials at the state level did not tend to question these dual directives, but they were preoccupied with how they would manage implementation and how quickly they could implement. The general expectation was for the process to take several years.

In terms of universalization, their focus appeared to be on how they would select sites and construct new AWCs, and what funding would be required and available for doing this. Although greater emphasis on reaching poorer and marginalized populations was mentioned during interviews, no clear strategies for accomplishing this were described.

In terms of DFMs, the discussion with state-level officials in the three different states provided striking comparisons and contrasts, as described below:

5.1.1. Madhya Pradesh

In MP, where the SHG DFM was widespread and seemed both robust and successful, state-level officials were in the process of implementing policy and operational changes that threatened to undermine the DFM without any clear promise of enhancing ICDS's ability to achieve its primary objectives. As described in previous chapters, the introduction of the six-recipes-a-week is likely to undermine both the operational feasibility and the financial viability of the DFMs. Even if the new policy does not destroy the DFMs, there is little reason to believe that it will have an effective impact on childhood malnutrition, since the six recipes are intended for the spot-feeding of children from 3 to 6 years in the AWCs, and not the Take-Home Rations, which target participants at the critical periods for preventing malnutrition: pregnant women (to prevent low birth weight babies), lactating women (who should be encouraged to continue exclusive breastfeeding for 6 months), and children during their most nutritionally vulnerable period, from 6 months to 3 years. These primary targets are receiving THRs, not spot feeding.

State-level officials in MP also did not seem to appreciate how valuable the convergence with SGSY had been in launching the DFMs in that state. If this had been well understood, ICDS officials might have consulted with SGSY in making the policy decisions that appear to be a major threat to the financial viability of the DFMs in MP.

In addition, the plans in MP to provide the funding for the SNP directly to the AWC will complicate invoicing and cash flow for the DFM, and probably increase both transportation costs and banking charges with no off-setting benefits to the DFMs or ICDS. This will put additional burden on an already over-burdened AWW. Given the experience in Bihar, this change in the flow of funding is also apt to encourage and/or facilitate corruption in the system.

The assessment has shown that the MP DFM can indeed be highly effective. The lessons to be learned here are that:

- ICDS officials at the state level need to understand the financial underpinnings of the DFMs and vulnerabilities for dilution or corruption,
- Convergence cannot be limited to the launching of a program; there needs to be ongoing convergence in order to sustain the program.

5.1.2. Andhra Pradesh

In AP, state-level officials were unable to articulate what had been accomplished with the CARE pilots (although they were generally very positive about the support CARE provides in the state), and what lessons that experience offered to ICDS. There were many contradictions within the

same conversation during an interview, and contradictions across conversations. For example, one ICDS state-level official spoke both of there being no real need for machines, and then said that the machines, even though they rusted, would last forever. Yet, one of the lessons that CARE learned in AP was that the women entrepreneurs needed to be trained in the proper care and maintenance of equipment, and a local repair person also needed to be trained and available. While ICDS officials acknowledged the weaknesses of the Mothers Committee as a DFM platform (and recognized that the DFMs were no longer Mother's Committee, since the membership had not changed as mothers "graduated" from the category of program participant), it was unclear what platform they were planning to use in the future. CARE staff said that the government did not want any more pilots, but the ICDS state officials described the as-yet unclear future plans as being pilots.

In terms of convergence, the ICDS officials in AP conveyed a sense of ambivalence or apprehension about working with the World Bank–funded IKP project in AP, which roughly equates with SGSY's role in MP. This ambivalence or apprehension was expressed both as a desire to maintain control (including of ICDS funding, as the two rupees per program participant GOI budget might be absorbed into the IKP program), a need to take credit for achievements that were seen as ICDS achievements, and a sense that no assistance was needed: ICDS was capable of carrying out its mandate without the assistance of another government department. These attitudes were not unique to the state-level; lower level ICDS staff expressed the same reticence about future collaboration, even though everyone seemed to acknowledge that such convergence was inevitable. ICDS representatives also suggested that IKP was not eager to collaborate with ICDS; since the assessment team did not have the opportunity to meet with IKP, we were unable to ascertain attitudes within that program directly.

5.1.3. Bihar

In Bihar, state-level officials recognize that the model they had successfully implemented has the benefit of simplicity and represents an improvement over what had preceded it, particularly in terms of reducing disruptions in the food supply. However, they were also well aware of the failings of the current Bihar DFM, and they were on the verge of piloting projects in in Madhubani and Sitamarhi districts which they plan to replicate and scale-up over a six-month period. Since these plans, which are already being implemented, illustrate the future direction for Bihar, they are discussed below under replication and scale-up. It could be useful for officials in Bihar to study the models in MP, or to be provided with information on that model, and both the CARE-ICDS models and the WFP provide useful examples, of possible scale and the value of local "ownership" versus paid labor.⁴⁷

5.2. Operational and Cost Issues at the District and Block Level

While the costs associated with universalization — construction and staffing of AWCs and provision of food and services to additional program participants that are not currently being reached — were discussed by ICDS representatives, there was never any suggestion from them

⁴⁷ A briefing based on this assessment report could be sufficient.

that the DFM, as a mechanism for producing and delivering the SNP, was adding to ICDS's operating costs at any level of the system⁴⁸.

There was also no suggestion that the work related to the DFM was a distraction from other ICDS program components. ICDS stakeholders did not report that the DFMs had drawn focus or AWW and supervisor emphasis away from other, non-food activities or aspects of the program such as health and nutrition education, growth monitoring, convergence with the Health Department, and home visits. In all three states, we found that ICDS district- and block-level staff were remarkably interested in and sensitive to the needs of the women operating the DFMs, and they had a much better understanding of how the DFMs operated than the state-level staff. In MP and AP state-level representatives were not well-informed about how the DFMs operated — this was at least partially because of recent staff turn-over. Bihar was an exception; Bihar state-level ICDS staff explained both the current and planned DFM very clearly.

5.2.1. Madhya Pradesh

In MP, district- and block-level staff members were very concerned about the likely fate of the DFMs given the recent policy directive about the six-recipes-per-week. In MP and Bihar, these district- and block-level staff often traveled with the team, even though not required to. Although we asked them not to participate in the focus-group discussions and group interviews with the women's groups (because their participation would influence the dynamics of the group), they spent hours discussing the program with us, both in the evenings and on Sundays, and they were keenly interested in our observations and comparisons of their model with others. We probed at some length concerning the use of their own or other staff time in establishing and supporting the DFMs, but there was never any suggestion that this model, as compared with the vendor model, was more resource-intensive in terms of use of ICDS staff time or other ICDS resources. In MP, the completion of Form 7 (the major reporting form) was described as demanding much time at various levels, but Form 7 — as with reporting systems used in other states — was relevant to any model used by the SNP.

5.2.2. Andhra Pradesh and Bihar

Since there were only a few DFMs and these were still receiving support from CARE in AP, there was no apparent cost burden for ICDS. This was also true of Bihar, where state-level officials told us that, even for scale-up, they had needed to do no more than open bank accounts and hold meetings to inform AWWs about the bank accounts.

5.3. Monitoring and Supervision

In AP, monitoring and supervision of the individual DFMs is good, because CARE is still responsible for piloting the model there and the DFMs receive special attention. In MP, where the ICDS block and district officials we met with were receiving and reviewing the reports, the data

⁴⁸ These comments relate to recurrent operating costs, not initiation and scale-up costs. We discussed those costs and collected related data in MP, but, given the uncertainty of what type of model might be implemented in the future, and the somewhat subjective nature of the cost data, we have not included a discussion of those costs here. The issue of costs of implementation was virtually irrelevant for the current Bihar model.

collection aspect of monitoring is satisfactory. Overall, however, monitoring and supervision of the SNP generally are weak in all three states. Apart from problems in the design of the forms used in the information system, all three states have a very low ratio of supervisors to AWC, making effective supervision difficult. There is also an issue of unreliable data, most notably in Bihar, but to a certain extent in the other states as well. One cannot have confidence in the statistics on how many program participants (by category of participant) received what quantities of food from the SNP. This is not a problem associated specifically with the DFM approach, but with the SNP more generally, and it is not a new issue. However, a properly implemented DFM could be a real benefit to ICDS record-keeping and reporting, given the need for proper records to support decentralized payment and procurement.

State-level ICDS staff did point out that they — and the entire ICDS program — did not appear to have made any real progress in decreasing childhood malnutrition, but they did not suggest that they needed more data to pinpoint weaknesses in the current program so that they could make appropriate changes which might better address the basic vulnerabilities that lead to childhood malnutrition. This point is important, because the focus of the existing reporting systems appears to be on numbers and categories of program participants served, and not on the measurement of nutritional status. In Bihar, ICDS staff reported that, despite training and the availability of scales in AWCs, they doubted that 20% of the AWWs were actually doing the routine measurement of malnutrition status that they were supposed to be doing.

One might reasonably hope that a well-functioning DFM, with its strongly increased sense of community participation, might help to focus attention on such issues as the relative emphasis on spot-feeding and THRs, especially if the DFM Groups received basic training — and encouragement — related to malnutrition and effective methods of combating it.

ICDS staff in Bihar knew that they were dealing with a useless information system, based on meaningless input data. Almost all of the AWWs fill in the identical numbers every day the AWC is open, simply recording the target figures allocated to them by the block office on forms. Day after day, they record that the AWCs served the following program participants: 40 children under 3, with 28 having no, 1st or 2nd degree malnutrition and 12 having 3rd or 4th degree malnutrition; 40 children over 3 whose nutritional status is not recorded; 16 P&L women, and 3 adolescent girls. Part of the motivation for following this pattern, is that any other pattern would require mathematical calculations that are complex and might also reduce the amount of funds they receive based on the government formula — since it is highly likely that they are not serving as many program participants as the government formula provides for. Since the ratio of supervisor to AWC was particularly poor in Bihar, there was no immediate likelihood of being able to address the fundamental data-quality problem.

In AP CARE monitors those blocks where its DFM pilots are operating. However, the ICDS supervisors monitor the government-assisted Food Processing Units which in turn report to the CDPO. The CDPO also visits the AWCs occasionally. If the current units are scaled up and CARE is not present, monitoring is apt to prove less rigorous.

5.4. Impact on ICDS Program of DFM compared to the Vendor Model

It is beyond the scope of this assessment to answer larger questions about the ultimate programmatic impact on nutritional status of the DFM compared with the vendor model, largely because there are no available data to compare the nutritional impact of the two approaches. Indeed, as discussed above in the introduction and background section on ICDS, there is no clear evidence that the ICDS program has had a measurable impact on childhood malnutrition within India, despite its enormous size and tenure of decades. There is apparently some evidence that it has been effective in selected areas, particularly where additional assistance has been provided (e.g. through CARE, UNICEF or the WFP), but even this evidence is not considered robust. With the kinds of interventions involved, it would be very challenging to tease out which program interventions might have actually impacted nutritional status. For example, CARE-assisted areas under the RACHNA program were found to have had a positive impact on nutritional status (along with other health status indicators), but nothing conclusive can be said about which program interventions were effective, i.e. BCC related to breastfeeding versus better targeting of THRs, etc.

Nevertheless, we can assume that the DFMs are as or more effective than the vendor model in fulfilling ICDS's ultimate programmatic objectives. Data collected during the assessment reflected a fairly consistent stakeholder attitude that the DFM — in all three states — was an improvement over the vendor model. Reasons given for this included:

5.4.1. Fewer Disruptions in the Supply Chain

By working with market forces, the DFM model does not rely on a complex and imperfect government supply system. For those readers who have worked in the health sector of developing countries, the shift from a centralized supply system to this decentralized supply system, could be compared with a MOHFW shifting from a centrally directed pharmaceutical supply system that suffers from chronic leakage and stock-outs to using a flourishing retail pharmaceutical network. The availability of food for the SNP has improved in all three states under the DFM⁴⁹, with improvement in Bihar linked to improvements in cash flow.

5.4.2. Reduction of Corruption

The general sense from stakeholders was also that corruption had been reduced through the DFM, primarily because there are fewer people involved in the supply chain so fewer bribes are required. One stakeholder in AP estimated that the financial dilution — in terms of what program participants actually receive — was about 30% for the payment of bribes throughout the supply system under the vendor model. In Bihar, another stakeholder estimated that the dilution was probably still as high as 50%. Although other improvements — notably less disruptions in the supply of food — were valuable, the DFM in Bihar is particularly vulnerable to corruption, especially since the cash flow is controlled by a low-income AWW. There is no accurate way to measure what the dilution through corruption might be in the various systems, and the state-level officials in Bihar said their best measurement tool was the number of complaints they received.

⁴⁹ The one exception to this perspective was from a stakeholder in AP who felt there were fewer disruptions in the vendor-based supply chain because bribes, by effectively greasing the wheels of the system, made it operate more smoothly.

(This is a perfectly acceptable measurement tool, as Transparency International relies heavily on citizen complaints/reports for its ratings of corruption in different countries.)

In addition to attempting to measure actual corruption, one can also look at the different systems from a control perspective and consider what design elements provide some vulnerability to corruption. We were also told that (at least in some cases) they needed to pay officials to get a signature on their reports. Naturally, if the AWW is being asked to pay someone else, she is even more likely to find some way to access funds for herself. In addition to access to cash, the AWW has access to unprocessed food that can be readily sold or taken home to augment her own household's food supply. This problem is not unique to Bihar.

Corruption might also be avoided through better convergence. For example, if DFMs in AP were to receive funding from one agency (e.g. IKP) but were monitored by another (e.g. ICDS), there might be less potential for undue influence from the funding agency. The SHGs in MP will not be as susceptible to undue influence, especially if they are federated. More and more of them are federating, and their strength is becoming more apparent to ICDS officials. Since the SHGs in AP are already strong and federated, this is another argument for using them as the primary platform for scaling up DFMs in AP.

5.4.3. Fresher more Acceptable Food Available to Communities

Despite on-going discussion of a possible need to vary the menu of the AWC to make the available food less monotonous, one of the most common observations from stakeholders on improvements achieved under the DFM was that the food was fresher and more acceptable to the communities.

5.4.4. Stakeholder Perceptions

Although there were suggestions for changes in the way DFMs were designed and operated in the different states, data collected from stakeholder interviews and focus group discussions consistently confirmed that the DFMs effectively facilitate ICDS's capacity to operate its core program and achieve its primary objectives. The model was seen as an improvement over the vendor-based system.

6. IMPLICATIONS FOR REPLICATION AND SCALE-UP

Replication and scale up should clearly be based on a consolidation of the lessons learned from existing pilots of DFMs across different states. Policy directives and operational decisions at both the national- and state-level should be grounded in the lessons from current and past experience. While there is scope for modifying characteristics of DFMs that allow tailoring to a specific context (e.g. recipes in rice-eating versus wheat-eating states being an obvious one), there are also some lessons that should inform the design of models for replication and scale-up. These are summarized below.

6.1. What's Cooking

Standards have been established by ICDS for the SNP, and, with the probable exception of Bihar, these were being followed by the DFMs we studied, as the recipes were quite standard. Micronutrient fortification of food may be an issue for the DFMs in the future, or this may be achieved through the provision of fortified candies, as is being done in Bihar⁵⁰. Some ICDS officials are rethinking the issue of dietary diversification to ensure that participation rates are not low because of monotonous food; however, we did not hear from the AWCs that monotony was a deterrent to consumption of the food, and this aspect of the program should be carefully studied, as decisions at the state-level seemed to be taken based on assumptions at the state-level rather than being informed by on-the-ground research. Obviously, there must be some balance between variety and transactional and economic costs of a diverse diet.

In Bihar, ICDS state-level officials had carefully researched several recipes and selected three that were produced on a trial basis. All three recipes were packaged powdered food that could be produced by the “community kitchens” Bihar is planning to pilot, and they met the calorie and protein content requirements. With these criteria met, the recipes were evaluated by ICDS on a combination of cost and taste. Of the three recipes, the second least expensive one was chosen because it was considered tastier than the cheapest. Officials were also considering using two of the recipes, one salty and one sweet, for variety. This degree of variety and the methods used to evaluate the recipes reflected carefully informed decision-making, as contrasted with the six-recipes-a-week policy that was being implemented in MP.

If there is to be any real value added by the DFMs, then processing of the food will be part of their activities, not just sourcing from a wholesaler and retailing to the AWCs. Depending on the complexity of the processing, ICDS should give careful consideration to the scale of production of the DFMs and the type of equipment procured. Bihar is considering buying grain that has already been ground in the marketplace to avoid grinding. AP experienced problems with their equipment; although these problems were eventually handled through better maintenance and repair, it appears that the equipment initially procured had limited capacity or was not sufficiently robust. MP DFMs, where the investment in equipment was more substantial, did not have the same problems, nor did the WFP DFM established in MP, which purchased relatively heavy

⁵⁰ The Micronutrient Initiatives representative felt that, with suitable attention to design issues, it should be feasible for the DFMs to fortify food if that becomes part of the program mandate. Among the main issue would be getting fortification supplies to them, and quality control considerations related to the quantity of premix, etc.. He suggested that the DFM might pick up the supplies from the AWCs, as there is already a government distribution system at that level.

equipment and is producing enough food for 162 AWCs (WFP 2007). It appeared that the investment in equipment for DFMs was typically based on the availability of funds or the impact on the CARE or ICDS budget rather than a careful analysis of the longer-term cost-benefit analysis of more (or less) robust equipment with a larger production capacity. Given the limitations of what we were able to investigate with a small sample of DFMs, nothing conclusive can be said about equipment investment in this report, but it should not be difficult for ICDS to evaluate these options with a combination of equipment and financial-economic expertise. Such an evaluation is recommended, and — as with the cost of ingredients and their relative calorie-protein content — should inform plans for recipe selection, based on the processing required for different recipes.

6.2. Financial Viability of the DFMs

While the nutritional content and proper processing of the food are critical elements of designing and establishing DFMs, the revenue and cost drivers that underpin financial viability must also be carefully considered. Without financial viability the model fails. Dilution of the “market” for DFMs, by assigning some part of the food provision to a state food agency, can undermine the financial viability of DFMs. Reducing the number of AWCs per DFM can do the same. At the most obvious level, asking the DFMs to follow recipes where the ingredients of the recipes approach or exceed the price per program participant or per kilo being offered by ICDS, will clearly affect financial viability. Before changing recipes or introducing more than one recipe to improve the taste of food or create variety, ICDS should conduct research to ascertain if the monotony or taste of the current recipe is actually a key deterrent to target program participants consuming the food. Everyone involved in the design or implementation of DFMs should develop a solid understanding of the factors that influence financial viability.

In addition to ensuring adequate payment for the recipes it wants to provide under the SNP, ICDS should also work to ensure the smooth flow of funds to the DFMs. In Bihar, the cash flow problems were cited as the principal cause of interruptions in food supply. A second factor leading to food interruption, aside from bottlenecks inside the government system, were delays on the part of the banks where bank to bank transfers could take as long as ten days. ICDS could work with other departments who deal effectively with the banking system in order to address this problem. Another possibility, raised by USAID, is for the district collector to “take a lead on this and ensure that the gaps are reduced drastically.”

Changing the cash-flow system so that AWCs pay the DFM directly can increase transport and banking charges, thus undermining financial viability, and create vulnerability to corruption, as demonstrated in Bihar. The DFMs can be supported through advance payment from ICDS, as an alternative to helping them receive subsidized bank loans, as is done in AP. However, developing their capacity to obtain credit or loans and to save will make them more robust in terms of increased financial skills and capital accumulation — this is preferable to dependence on ICDS for advance payments.

6.3. Self-Help Groups as a Platform for Building DFMs

SHGs, initially established with the assistance of another Government Department or program (e.g. SGSY) with access to subsidized credit and skill in capacity building for micro-credit and micro-enterprise, provide a more robust platform for DFMs than alternatives such as the Mother's Committees used in AP or the Food Procurement and Monitoring Committees used in Bihar.

Whether or not similar enterprises, set up by the state with staff paid by the state, can be as effective will be a key question to ask as the new Bihar model is implemented. This model, while working with SHGs, is planned as a mechanism that will hire women from these SHG as employees of a "community kitchen" that will not be owned by the women. There may be some initial advantages (uniformity and better monitoring), but these could be transferred to an entrepreneurial model, and there are bound to be disadvantages in a "community kitchen" that is not an enterprise "owned" by the women who work in it. This is apt to result in a loss of efficiency, as the women will not be motivated to minimize costs and maximize purchasing power when procuring ingredients. Spill-over benefits if any will be very limited, as ICDS is only planning to pay the women as kitchen workers and the wages are currently envisioned at a very modest level, close to the honorarium paid to AWWs. Bihar planners may find that studying DFM Groups in MP, along with the model set up by the WFP there, could provide them with useful ideas to inform the model they are launching.

6.4. Federating the SHG-DFMs

In order for women (and ICDS) to be able to capitalize on all of the potential spill-over benefits and ensure sustainability, the SHG-DFMs should federate, and build the capacity of the federation members to understand the economic implications of proposed or actual policy decision affecting them and negotiate on their own behalf. There should be written contracts between ICDS and the DFMs. This prevents one party from making decisions without the consent of the other party, particularly decisions that could lead to financial losses for the DFMs without compensation. Annual review mechanisms and consultative mechanisms involving the DFMs should be a regular part of the implementation process. Underlying these mechanisms is the basic premise that the women who are DFM Group members should be able to speak for themselves and not be spoken for by others.

Through federations, the DFM Groups can play a role on a state-wide basis. The criteria for selection of the DFM Group should be a clear technical understanding, especially the capacity to conduct an economic analysis of the group's finances, and a commitment to equity and gender concerns. As federations grow stronger, policy-makers should also build in mechanisms to deal with federations rather than individual SHGs. The decision on which groups are given DFM contracts by ICDS could be left to the federations when the federations are strong enough to handle such decisions. Otherwise political parties may want to start their own groups and get them to work as DFMs, or other types of undue influence might be exercised over the DFMs.

6.5. Convergence with other Programs or Departments

Convergence with other Government Departments and programs (particularly programs skilled in grassroots enterprise development and support to SHGs as well as women's programs) should be an essential element of the DFM, both for DFM launches and for continuing support and monitoring. The DFMs provide an excellent platform for convergence between ICDS and other Government Departments concerned with poverty alleviation and the development of grassroots enterprises (e.g. SGSY) as well as Health and Family Welfare, Education, *Panchyati Raj* and Rural Development and Women's Programs — run by the state or through federations. Convergence with other partners appears to be very important to success, and convergence cannot be limited to the launching of a DFM program; there needs to be on-going convergence with clearly delineated roles based on the strengths of different departments. Although not specifically related to DFMs, we should note the strong convergence ICDS has achieved with the MOHFW for joint planning and service provision.

Because a historical sense of territory and inability to work across departments is endemic to most government departments, for convergence to take place, distinct roles and responsibilities on the part of government departments and staff at all levels need to be delineated. Joint ownership of the successes of convergence, sharing of resources, and a clear sense of different departmental goals and mandates are important among all levels of ICDS staff, as well as within the agencies with which ICDS will converge.

Convergence also reduces administrative and cost burdens for ICDS, and the shift to DFMs is not seen as a strategy that will increase the burden of the SNP for ICDS. If effectively carried out, convergence could result in cost sharing and a better division of labor, leading to more efficient use of resources across all departments.

6.6. Reducing Corruption

The SNP component of the ICDS nationwide has had an established reputation for lack of transparency. The centralized vendor model for the SNP is known to be corrupt and to entail bribes at several levels as well as leakage of food. We were not able to quantify corruption and leakages related to the SNP within the state food corporations, and we were also unable to obtain cost data from them, although we requested such data in MP from Agro Foods as its role in the SNP raised questions: Agro Foods was being paid a higher rate by ICDS than the DFMs were being paid, even though Agro Foods should have had enormous cost advantages in terms of economies of scale and it is using soya as a key ingredient, which, as highlighted above in the chapter on financial viability, is much less expensive than the *moong dal* being used by the DFMs⁵¹.

With the exception of the current Bihar model, which attracts many complaints about corruption, stakeholders felt it had been reduced through the DFMs. The individual women's groups help to reduce corruption. If they are federated, they will be even more effective, and convergence should also help to reduce or eliminate corruption.

⁵¹ The rationale for the shift from soya to mung dal was explained as being the result of many of the DFMs not having proper steaming equipment, which again raises the question: what type of equipment should the DFMs purchase? Those DFMs established by CARE did apparently have proper equipment to steam soya.

In addition to leakages within the ICDS SNP, there are leakages through PDS. Women in MP reported paying for 25-kilo bags of wheat which were found to be less than 25 kilos when they weighed them on their own scales. However, the complaints of the women reduced or eliminated this problem in many cases, and their voices could be more effective in influencing the PDS if they were working through strong federations. The federations might themselves implement simple monitoring and negotiation systems that allow field-level problems to be dealt with at the state level with participation from the DFMs.

6.7. Financing Replication and Scale-up

While the costs of implementation (including capital costs for equipment) and of on-going operations will be reduced if there is effective convergence, an important condition for replication or scale-up is ensuring sufficient resources for implementation and on-going operating costs. Based on the informed opinions of ICDS official in MP, there is good reason to believe that the DFM that has been scaled-up in that state does not put additional recurrent operating costs burden on ICDS, and costs during the more intensive implementation stage were not considered significant. However, demand for SNP had not risen significantly in that state.

Improvements in the SNP and universalization of the program can be expected to cause program costs to increase dramatically — if ICDS can effectively universalize — primarily through the increase in demand. In Bihar, for example, where the state has been working to improve all of its social sector programs, there was a very dramatic increase in demand for health services when those services were improved through better provision of pharmaceuticals. Over the six-month period in the first half of 2006, demand for health services shot up from 39 visits per PHC per month to 3,000 visits. State officials in Bihar are anticipating a similarly striking increase in demand for the SNP as the ICDS scheme is universalized, dilution from corruption is reduced, and the food itself is more appealing and more available. While this will be true regardless of the model employed, effective DFM implementation should only increase demand, with the related budget implications.

If the above planned changes in the ICDS SNP are successfully implemented, this will have major budget implications for GOI and state budgets, particularly if the BPL criterion is eliminated. Children under six years of age represent 20% of India's population, so this group alone — without consideration of P&L women or adolescent girls, comprise 200 potential program participants per 1,000 population per AWC. The two-rupees-per-participant-per-day budget is also considered to be an underestimate by most stakeholders, so — if ICDS is successful in universalizing the SNP — the GOI should anticipate both a per participant cost that may rise above Rs. 2 and — more importantly — a budget that is based on much higher number of program participants. Although ICDS costs may increase for other reasons, such as hiring more supervisors, the cost of food commodities — based on the type of food provided and the number of participants (rather than the costs of operating the program that supplies food) — will be the major cost. For these reasons, the DFM approach may represent a major potential opportunity to keep costs as low as possible, as the DFM “enterprises” have much more incentive than centralized vendors do to identify and implement cost-saving measures.

6.8. The Role of State Food Corporations

ICDS should consider the role of state food corporations on a state-by-state basis. The role that state corporations are playing in both AP and MP (but not in Bihar) appears to be antithetical to decentralization and community ownership, and there is not a clear ICDS policy on the role of state food corporations.

In MP, ICDS state-level officials said they were planning to phase out the role of Agro Industries Corporation, even though its role had been increased relatively recently when it was given the weaning food contract. Another stakeholder in MP asked, “What will [Agro Industries] do if they don’t supply the SNP. They have people working there who need jobs.” At the community level, we were informed that the quality of this weaning food was often poor because of shelf-life limitations and the length of the distribution pipeline.

In AP, AP Foods is reportedly supplying SNP foods in approximately 40% of the ICDS areas (not the areas served by DFMs). According to one state-level ICDS official, an advantage of using AP Foods is that they can simply be given the quantity and calorie requirements by ICDS, including the GOI budget, and they would have to supply the food, because they are part of the government; this allowed ICDS to operate independent of market fluctuations. Another stakeholder saw the state corporations as a back-up plan if DFMs failed. Some of these views might — indirectly — make the transition to DFMs more challenging.

6.9. Providing an Enabling Environment

Any DFM will take time to mature, for systems to be implemented, refined, and streamlined; this maturing requires a commitment from policy-makers to provide a stable enabling environment for the DFMs. ICDS policy-makers frequently change policies. This is partly due to the continuous change in leadership in the bureaucracy, which does not help ICDS learn from its own history, partly due to efforts to improve the department’s image, and partly due to efforts to address shortcomings. ICDS staff reported that ICDS has often not allowed time for new policies and programs to mature, and/or not provided the consistent monitoring that would foster the consolidation of lessons with the maturing of new programs and policies. Thus, officials often implement new policies that have already been tried and failed and/or are in the process of being dismantled because of their failure in a neighboring state. There are examples of this in the DFMs that we studied in three states, e.g. providing funds directly the AWWs has failed in Bihar and is being introduced in MP, and DFMs with women working as paid laborers rather than owners has apparently been tried and failed in Orissa and is about to be introduced in Bihar. This suggests the need for a structure or forum for cross-state sharing within ICDS, as well as among federations of DFM groups.

What factors would promote this stable enabling environment? Written contractual agreements between the DFMs and ICDS are important, and any renegotiation of these contracts should require a two-party agreement taking into account the economic and transactional costs and implications. This in turn can probably succeed only if the DFMs are federated and have a voice at the state-level, in order to have the strength of mass representation behind them to better leverage their interests in the decision-making process. Apart from their role in negotiating and decision-

making, one of the major functions of such federations would be to facilitate peer-learning whereby, through horizontal exchange, the DFM Groups can continuously upgrade their skills, along with the performance and standards of the DFMs. In the future, federations can potentially help the DFMs to reap greater economies of scale in the procurement of raw materials or even transportation and delivery, through collective negotiation.

Efficient and effective performance and scaling-up of DFMs, need an enabling environment which includes:

- Stability in the decision-making process,
- A thorough understanding of field-level reality in a systematic manner,
- On-going decision-making that is consultative and not one way, and,
- Convergence.

6.10. Key Opportunities in Addressing Malnutrition

ICDS is best known for its SNP, and, despite an interest in moving beyond its one-product image, the SNP program remains both the major part of its core program and a primary objective. Although many stakeholders appropriately highlighted the need to focus on other aspects of its program, the most effective way of attracting program participants to the AWCs where they will then receive other ICDS program services appears to be the availability of supplementary food, especially the THRs. This has been demonstrated with the success of the ICDS Nutrition and Health Days as a strategy that uses THR to increase participation in health services. (The strategy did not succeed in states like Bihar where the disruption of the food supply was a chronic problem.) THR is an important and effective component in improving ICDS's reach to program participants at the critical life stages (pregnancy and the first two years) when vulnerability to malnutrition is highest.

For those DFMs that are already established and reasonably robust, the women operating them represent an important potential opportunity for ICDS. These women are self-confident and often quite vibrant actors in the community leadership role they have gradually assumed. Collectively (and often individually) they have more credibility and influence in the communities where they live and work than the AWW does; even when the AWW is reasonably effective in carrying out the ICDS program at the grassroots level, she is only one individual. If the women's groups are provided with additional training on health/education/nutrition issues and BCC tools, many of them could be powerful agents of change acting in the ICDS interests within their communities, not only for the SNP but for other ICDS services. Indeed in MP, women's groups have already started playing that role.

These women can do more than produce the food, they can promote its proper use, even advocating — from the local program participants to state officials — for an adequate supply of food in the SNP. Such an expanded role would take careful thought and planning. However, the women we saw who operate successful DFM Sites were clearly invigorated and enthusiastic. With roughly 2–7 DFM Sites per block, they could potentially participate in many community-level activities in their areas, though they would likely not be able to cover all ICDS communities covered by the DFM Site.

6.11. Consolidating Experience and Moving Forward

Policy-makers do not seem to have had an opportunity to absorb the lessons learned from the recent ICDS history with the DFMs, and there has been little or no horizontal learning across state borders on what has or has not worked, and why. To build a collective understanding, peer-learning and horizontal exchanges should be embedded in the piloting and replication or scale-up of DFMs, along with federation building. This peer-learning should start from the village level and build to the block, district, state, interstate, and national levels, including officials in the process so that learning by women's groups and state officials occurs in parallel.

Much of the substance of this last chapter is included in the final section of the Executive Summary, and circulating this document to ICDS officials at the state-level would be a useful way of sharing lessons learned. However, it might be most useful if ICDS were to host a workshop at the national level that brings together state-level officials, particularly representatives from the block and district levels, who best understand the experience to date, along with stakeholders from CARE, USAID, UNICEF, WFP, and the World Bank. This might be the most effective way of better informing policy- and operational-level decisions at the state level and below.

Last but not least: the DFMs are providing an essential service. They should be viewed as this and not as groups to whom ICDS is doing a favor — a perspective we heard of from one ICDS official, but only one. They do and can help ICDS to fulfill its mandate both by being a supply system for the SNP and through all the spill-over benefits that are equally important.

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ANNEX 2: PRINTED & VIRTUAL SOURCES

1. Ahmed, Akhter U., Michelle Adato and Shahidur Rashid. 2006. Food Aid Transition in India's Integrated Child Development Services (ICDS) Program in Care-Supported Areas. Washington: International Food Policy Research Institute (IFPRI), submitted to the Food and Nutrition Technical Assistance (FANTA) Project of the Academy for Educational Development (AED).
2. Anderson, Mary Ann, Narendra Arora, Alfred Bartlett, Rajesh Kumar, Renu Khanna, Lalit M. Nath and Roberta Van Haeften. 2006. Reproductive and Child Health, Nutrition and HIV/AIDS Program (RACHNA) Final Evaluation.
3. Akshara/CARE. 2006. Community Managed Supplementary Nutrition Program: CARE India (Andhra Pradesh).
4. CARE. 2006a. Reproductive and Child Health, Nutrition and HIV/AIDS (RACHNA) Program: End of Project Documentation-National Document. (labeled working draft, dated April 5, 2006)
5. CARE. 2006b. Food for Thought: Community Managed Supplementary Nutrition Programme. (25 minute promotional documentary on CARE's experience in AP)
6. CARE. 2006c. INHP-III Proposal for phase-out of Title II Program. July 7, 2006.
7. CARE. 2006d. Integrated Nutrition and Health Project Development Activity Proposal (October 2001–September 2006). Title II, Monetization, Farm Bill 202 (e) & Child Survival Joint Request.
8. CARE. 2007a. Decentralized Food Model: CARE India (Andhra Pradesh). Hyderabad: CARE in coordination with Women Development & Child Welfare Department. (Told not to quote)
9. CARE. 2007b. RACHNA Program 2001-2006: Summary of Approaches and Results. New Delhi: USAID-funded Reproductive and Child Health, Nutrition and HIV/AIDS Program.
10. CARE. Undated. Reflections on a journey... RACHNA midway. New Delhi: CARE India.
11. CARE. Undated. Simplified Approaches to Meet ICDS SNP Norms: Food Recipes under Supplementary Nutrition Program., Technical Reference. (bound hard copy)
12. Cavale, V.M. 2004. FANTA Project: Andhra Pradesh State. Trip report on visit from September 20 through 25.
13. Cavale, V.M. 2004. FANTA Project: Bihar State. Trip report on visit from October 25 through 27.
14. Cavale, V.M. 2004. FANTA Project: Madhya Pradesh. Trip report on visit from October 6 through 10.
15. Cavale, V.M. 2004. FANTA Project: Orissa State. Trip report on visit from September 13 through 17.
16. Cavale, V.M. 2005. FANTA Project: Review of ICDS Supply Chain Systems in Nine CARE-Assisted States.
17. CIA. 2007. "India." The World Factbook. Central Intelligence Agency accessed April, 2007, from <http://www.cia.gov/cia/publications/factbook/geos/tt.html>
18. Das Gupta, Monica, Michael Lokshin, Michele Gragnolati and Oleksiy Ivaschenko. 2005. Improving Child Nutrition Outcomes in India. Washington: World Bank, World Bank Policy Research Working Paper 3647.
19. DWCD. 2004. Annual report 2003-2004. Delhi: Department of Women and Child Development, Ministry of Human Resource Development, Government of India.

20. Fiedler, John and Meenakshi Jain, 2006. A Cost Analysis of CARE/India's Reproductive and Child Health, Nutrition and HIV/AIDS (RACHNA) Program. Washington: USAID-funded BASICS III and A2Z Micronutrient Projects.
21. Galab, S. N. Chandrasekhara Rao. 2003. "Women's Self-Help Groups, Poverty Alleviation and Empowerment." Economic and Political Weekly. March 22-29: 1274-1284.
22. Gillespie, Stuart and Lawrence Haddad. 2001. Attacking the double burden of malnutrition in Asia. Manila: Asian Development Bank and IFPRI, ADB Nutrition Development Series No. 4.
23. GOI. 2006. Report of the Working Group on Integrating Nutrition with Health 11th Five-Year Plan (2007-2012). Government of India, Ministry of Women and Child Development, November 2006.
24. Gragnolati, Michele, Meera Shekar, Monica Das Gupta, Caryn Bredenkamp and Yi-Kyoung Lee. 2005. India's Undernourished Children: A Call for Reform and Action. Washington, DC: The World Bank, Health, Nutrition and Population Discussion Paper.
25. Hindustan Times Correspondent (front page government publicity release). 2007. "CM launches Ladali Laxmi Yojana." Hindustan Times, Thursday, May 3: 1, 5.
26. Jain, Sonu. 2007. "Won't get your PDS wheat if you don't buy your share: Rattled Centre tells UP, MP, Rajasthan." Indian Express, Friday, April 20: 1, 2.
27. Ramalingaswami, Valimiri, Urban Jonsson, and Jon Rohde. 1996. "The Asian Enigma: Commentary." The Progress of Nations – Fourth Annual Report. Paris, France. UNICEF. Accessed 8/15/07: <http://www.unicef.org/pon96/nuenigma.htm>
28. Right to Food. 2007. Accessed June 13, 2007: <http://www.righttofoodindia.org>
29. W&CD/PR&RD. undated. Self-Help Group Stepping Towards Self Dependency Training Module. (assume this was developed by CARE and then handed over to W&CD and PR&RD)
30. WFP. 2007. Promoting Women's Entrepreneurship. Delhi: World Food Programme.

ANNEX 3: SELF HELP IS THE BEST HELP

By SUBHASH MOGHE

Commodity Officer, Care-MP India

[Note: this evocative description was written in the form of a letter from the SHG members, based on extensive discussions with them.]

You must have heard the proverb "Self-help is the best help" and we the members of Geeta Mahila Self-help group have the capability and courage to prove this proverb. Let us narrate our story, which is a reality. We are the residents of village called Anjania situated 40 Kilometer away from District head quarter Seoni in MP. The major chunk of the population of our village belongs to schedule cast and schedule tribes. We are the group of 12 women and categorized under below poverty line (BPL) families in the village. Till the formal constitution of our group we were working as unorganized labor in Agriculture field and were earning Rs. 20-25 per day as wages. Owing to single crop grown in this area, it was not possible for us to earn wages round the year and hence we were migrating to earn wage during off-season and mainly were working as labor for road construction. The economic condition of our families were poor and it was not possible for us to send our kids to school as they were needed at home to take care of their younger so that we can earn wages outside the village. We never dream the status and recognition we have today not only as women entrepreneur but also as change agent for health behavior in our village community and do not want to look back any more.

During the year 1999 a Government official visited our village and one of our group member who is now our leader had an opportunity to interact with this official. It was then narrated by the official that the Government of India by restructuring the self-employment program in the country has launched a new scheme namely "Swaranjayanti Gram Swarozgar Yojna" (SGSY) from April 1,1999. The scheme aims at covering 30% of below poverty line (BPL) families in each block during next five years i.e., 1999-2000 to 2003-2004. The objective of SGSY is to bring the assisted poor families above poverty line (APL) within 3 years, by providing them income-generating assets through a mix of bank credit and government subsidy. When asked question by our group member from the official how one can be covered by the scheme? He replied just by regular savings in the group and by loaning among the members.

The idea clicked us and we the 12 members set to discuss on the scheme and decided to form a formal group in October 2001. We all decided to contribute Rs. 30/- per member per month to set a corpus fund and started giving loan to our group member as and when required. We had regular monthly meetings to discuss the fund management and our future course of action. We continued with these activities in the group for almost 2 years. Under the SGSY scheme the Government conducted our group assessment and after passing through grading we received Rs. 25,000/- as revolving fund for inter loaning.

The decision of state Government to procure supplementary food for ICDS program participants through village level women group proved to be a turning point in our economic status. A group of Government officials and CARE officials visited our village and reviewed our past performance as group and proposed to process supplementary nutrition food to ICDS program partici-

pants. The Government official and CARE official prepared a project proposal with our consent and submitted the proposal with Bank, which fetched us Rs. 200,000/- as, loan out of which Rs. 100,000/- was subsidy by the state Government.

Food processing was quite a new enterprise for us and we were nervous about how to move forward other than were not aware about the practical aspect of the enterprise. CARE helped us in getting rid of all practical difficulties by providing food processing machines and its operation on practical ground. We were extensively trained by CARE on management, hygiene protocol, technical aspects and accounting of a food processing unit and also received an opportunity to meet with another group managing the same enterprise in other program area of CARE. Initially we hired a building to install the machines for Rs. 700/- per month and this was the only building available in the village and any how we have to manage our operation in this small building which was not enough to store the raw material and finished product. As soon as we expended our work it was virtually impossible for us to manage the processing unit in this small building.

We all started thinking how to get rid of this basic problem and organized a meeting, where Government official and CARE official were present. In this historical meeting we all decided that "we will not share the profit unless the group buy a piece of land in the village and construct its own building. Based on our difficulties we were facing so far it was decided that the map of the building will such that it should have three rooms where the raw material, finished product and machine can be installed separately.

In order to implement group decision we bought a land of 1,500 sq. feet in the village in Rs. 9000/- and got it registered in the name of the group. In order to save the labor charges we all worked together and hired only one skilled labor for the entire period of building construction to a fix the bricks with cement, which requires expertise. We only procured construction material worth Rs. 125,000/- apart from this we distributed Rs. 120,621 as profit during the year 2005 which comes roughly Rs. 840/- per month per member. Now we can distribute more profit among ourselves as the group now standing on its own feet in all respect more over we have repaid Rs. 84,000/- against the loan and need to repay only Rs. 16,000/- in next couple of months. We understand that we need to sacrifice something to achieve something.

Sincerely,

Members of Geeta Mahila Self-help group.
Village -Anjania Block-Chhapara District-Seoni
Madhya Pradesh -India

ANNEX 4: ASSESSMENT PROTOCOL AND TOOLS

These following draft protocols and tools were submitted to staff in CARE, USAID/India and FANTA on Monday, April 23rd, and discussed at a meeting held at USAID/India.

I. Description of Decentralized Food Models

This section provides a general introduction to the DFMs and the different typologies we are assessing. The more detailed information, which will be both descriptive and analytical, will be in the following sections.

Broad Description of the Self-Help Groups with Decentralized Food Models

Are all DFMs implemented on the basic SHG model that has been established primarily for savings and loan or microfinance? If so, how have these basic models differed, e.g. CDF, DWCRA, SAPAP? What impact have the different foundation models had on the choice or apparent effectiveness of the DFM? If they were not built on other models, how were they formed? How many members do the SHGs typically have? How many members do the DFMs typically have? How often do they meet? Where do they meet? How often do they meet with ICDS or CARE officials? With what types of CARE or ICDS officials do they meet? Where do they meet? How many ICDS program participants do they have? Do they have other, non-ICDS clients? If so, what types and how many of each? How important are they in terms of the proportion of the DFM's total clients? In terms of total revenue? What assets does the DFM own (e.g. building, equipment, savings)? How large is/was its initial loan? What skills have members acquired to make the DFM function? How do different stakeholders describe the functions and purpose of the DFM?

Sources of Data: Interviews at all levels, but particularly at the SHG/DFM level. Any differences in the understanding of the model at the upper levels of the system, as compared or contrasted with the description and understanding at the lower levels, will be captured in our data collection and analysis.

Different Typologies of SHGs/DFMs

At the outset we are envisioning that the team will study one example of the following 6 models in the 3 states that will be visited. Differences between these models, beyond what is described below, will be observed.

1. CARE DFM in AP: purchase food from many sources
2. Government DFM in AP: receives support from CARE, but ICDS operated
3. CARE DFM in MP: purchase food from Fair Price Shops
4. Government DFM model in MP: receives support from CARE, but ICDS operated, also purchase from Fair Price Shops
5. CARE-CIDA supported in MP: now graduated from CARE input
6. Government DFM model in Orissa: received support from CARE, but ICDS operated, current status uncertain

Sources of Data: Interviews at all levels, but particularly at the SHG/DFM level, along with direct observation at that level. Again, any differences in the understanding of the different models at the higher levels of the system, as compared or contrasted with the description and understanding at the lower levels, will be captured in our data collection and analysis.

Specific Characteristics of Decentralized Food Models

How many members and program participants do they have? Can the intended participants be further defined, by age groups for children, by lactating/pregnant women? Is there any data — or even impressions — about whether the food goes to these program participants or is used within a household (HH) as a whole? What volume of food are they handling? What is the frequency and timeliness of food provision? How many days, out of 25, is food supplied? What is the amount of food delivered per *intended* participant? How do nutrition and health days (NHD) impact the food supply system?

Sources of Data: Interviews and examination of existing reports and available records.

2. Evaluation of the Financial Viability of DFM models

The protocols and tools for this aspect of the assessment are on spreadsheets. The team's primary focus will be on the financial viability of the DFMs themselves. If these business entities cannot support themselves, then the entire concept is on a shaky foundation. If they can support themselves and are offering benefits external to food distribution (e.g. poverty alleviation through income generation, etc.), then the model warrants some degree of initial investment in start-up costs and subsidy at higher levels, and these costs will be examined as well, but in a more general manner as detailed and robust data will not be available, with the exception of the CARE program.

Note: Readers will be provided with related spreadsheets on request.

3. Evaluation of the Operational Feasibility of DFM models

Convergence or Lack Thereof in Program Design & Implementation

Have the state government departments/program heads agreed to work together in designing, implementing and monitoring and supporting the DFM: i.e. ICDS, RCH, SGSY and/or FCI? If so, what formal mechanisms clarify such agreements? (MOU, contracts for SGYS for food procurement funded through ICDS). How adequately are formal agreements designed in terms of being comprehensive and specific in their coverage of program issues? How well are they understood by relevant stakeholders and actors? How effectively are formal agreements implemented and operationalized? In what practical ways are the ICDS, RCH and/or SGSY collaborating? What difficulties do they have in collaborating? Are there forms of collaboration that are not being explored or exercised? Is there confusion or inappropriate definition of roles between institutions? For example, should SGSY take greater responsibility for implementation of the DFM, and ICDS focus on policy formulation and monitoring and evaluation? What role does

the FCI play through the PDS ? Is there a formal agreement between FCI and other agencies on the program?

Sources of Data: Interviews with state government officials, printed formal agreements; interviews at CARE state offices.

Institutional Roles and Responsibilities in DFM Site Selection

How has CARE/ICDS site selection worked in the past? Which agency does the selection of the DFM/SHG groups? If SGSY has set the SHG up, does it coordinate with ICDS/CARE on which SHGs should be selected as a platform for DFMs? Although there are criteria, the placement appears to have deviated from the criteria. What are the current official criteria used for selection of SGSY groups and members and AWC sites? Do politicians want to lobby for benefits for their constituents? Do officials select more accessible villages with good infrastructure and conditions to work in, or larger villages where there will be some economy of scale? Are wealthier states and villages more apt to have well-organized women's associations (Mahila Mandals) or SHGs? When communities have related development programs, such as employment generation and FPS, does their demonstrated ability to manage and retain these make them more attractive sites? What impact does the site selection have on the performance of the DFM and on the socio-economic status of those served?

Sources of Data: Interviews at the state, district, bloc/mandal and village/SHG level, CARE state offices.

Institutional Roles and Responsibilities in DFM Implementation

Which agency has primary responsibility for the establishment and capacity building of the DFM? How does CARE interact with these state agencies, and how do its interactions vary between the different DFMs? Who conducts and pays for the technical training of the DFM? Which agency cultivates, facilitates and supports the SHGs? Which agency facilitates the bank linkage? What role does CARE play in selecting a SHG as a platform for a DFM and building the capacity of the DFM? What role does SGYS play? What role does ICDS play? What role does RCH play? What are the steps and activities involved in operationalizing the DFM, including steps for SHG formation and capacity building of SHGs to take up food processing, packaging and delivery to AWCs?

Sources of Data: Interviews with state government officials; printed monitoring and supervisory tools; interviews at CARE state offices; interviews with SHG groups.

Food Supply Chain: Logistics, Price Increases and Quality Assurance

In order to identify conditions that affect the operational feasibility of the models, including conditions related to logistics and food availability and quality, we intend to trace the Food supply chain from Food Corporation of India (FCI) and its Public Distribution System (PDS) through the vendor and fair price shop (FPS) that sell to the DFM, contrasting them with the market model. Beginning with the FCI/PDS, and also lower levels of the supply chain for both models,

we will be asking for a description of how the supply system works. Where is food stored along the supply chain? What causes disruptions in supply of food? For the FPS model, what do the DFM do when the FPS are out of stock? How frequent and prolonged are stock-outs, at what points in the supply chain? How are disruptions handled at each level? What causes fluctuations in price? How are price variations handled? At what stages is the food tested in a lab for conformance with calorie, protein and micronutrient content? At what stages is the food weighed? How are the vendors using the new ruling about minimum food standards to lobby for their own interests, versus those of the DFM and the FPS? How do stakeholders compare the performance of the DFM to that of the vendor-based model in minimizing and managing supply chain constraints such as skews in food distribution, storage requirements, delays on food availability, food damage and loss.

Sources of Data: Interviews at all stages, but much of this data may come from existing reports, or the interviews will be heavily supplemented by data from existing reports.

Monitoring and Supervision of SHGs/DFMs

Which agencies are monitoring and supervising the SHG/DFMs? ICDS, SGSY or CARE? Are there standardized monitoring and/or supervisory tools? If so, how many, and how do they inter-relate or overlap? How is performance measured? Is the frequency and timing of food provision a criterion? Are number of program participants a criterion? Is income generation a criterion? How do different criterion relate in terms of their relative importance? Is it measured differently by different agencies? How often does monitoring and supervision occur? What other support does the DFM need? Who provides this support?

Sources of Data: Interviews, primarily with CARE and officials or workers in the relevant state agencies, and review of printed materials for monitoring and supervision tools.

Key Implementation & Sustainability Challenges

How do different stakeholders identify and assess key challenges? What are the challenges? How are they perceived — in terms of magnitude and priorities — by different stakeholders? How have the challenges been addressed by different stakeholders, or how do they think they should be addressed? How intensive are the required human and other resource inputs required to adequately implement the DFM? How does this vary across models? Are there critical differences among the different models that significantly affect their feasibility in terms of logistics and other operational aspects?

Sources: Interviews at all levels of the systems, plus available reports and studies.

Political/Social Capital, Grassroots Empowerment or Community-led Development

How has the DFM impacted the members of the SHG? How has it impacted the benefits derived and the stability/sustainability of the SHG? On a scale of 1-to-5, have members experienced a change that can be contrasted before and after the implementation of the LFM, i.e. 'power to' (control over their own live, e.g. survival, labor, resources, freedom to move and interact, access to leadership, control over their bodies); 'power with' (collective power to negotiate with gender,

class, caste, institutions of the state, market and community); and 'power within' (e.g. confidence to challenge gender-related norms in personal lives)? Do they have more employment? Do they have more access to and control over their own incomes? Do they have more access to credit? Are they more able to interact with government officials at different levels? Are they able to access government resources that they did not previously access? Are they more able to interact with the market, buying and selling food goods? Do they feel more self-confident? Do they have more status in their homes and communities? Do they question social norms more than they did previously? Are they self-confident enough to question these norms with others in their social circles?

Sources of Data: Although other levels will be asked about this aspect of the DFMs, the focus here will be on the SHG level, and a few scaled questions will be tested and refined during initial field visits. The scaled questions may be used with other stakeholders to obtain their opinions.

4. Impact OF DFMs on ICDS Core Program

For this aspect of the assessment, the team will consider both the impact on ICDS in terms of costs (in a general sense) and administrative burden, as well as the beneficial impact (again in a general sense) on the objectives that are considered the salient features of the ICDS program (Ahmed et al 2006).

Policy Level Issues for ICDS at the National and State Level

Looking at the 11th GOI 5 year plan and the intended universalization of ICDS through the expanded reach of the anganwadi centers (AWC), what are current expansion plans? Is there a greater emphasis on reaching the poorer sections and marginalized populations? If so, what would the strategies to do so be? Reports indicate a range of challenges in the current systems of provision of food by vendors. What are the methods for monitoring timely and adequate delivery and quality of food by vendors?

How do ICDS state and national officials view the Supreme Court ruling to shift away from vendors to FPS and the SHG/DFM? Regarding the Supreme Court ruling about substituting community based groups (SHGs) for vendors for the provision of food to AWC, what is being done in different parts of the country? In terms of working with SHGs, is linking with SGSY considered a major strategy for ICDS? How would ICDS collaborate with RDD in this context? How can ICDS collaborate with FCI in this context? What roles does or could each program play? What are the difficulties in collaboration? Is collaboration and convergence across schemes and departments being increasingly seen as a priority for ICDS? If so, with which programs? CARE has developed a best practice, namely the Decentralized Food Models with SGSY SHGs providing food to ICDS AWCs, a model which has been scaled up in MP. Is this an appropriate strategy for scale-up in the rest of the country? What role should NGOs, such as CARE and local NGOs, play in the scaling-up process in other states?

Sources of Data: Interviews at national and state department levels, and official documents.

Administrative, Operational and Cost Issues for ICDS

Note: Cost issues were covered in section 2 above. What are the main components of ICDS To what extent are other ICDS components complimentary to or a distraction from the support of the DFMs? To what extent are the DFMs complimentary to or a distraction form other ICDS components? How do ICDS block, district, state and national officials view the DFMs? What additional resources (human, financial, other) has ICDS allocated for the implementation of the DFMs at block, district and state levels (in MP and AP)?

Is the DFM seen as process intensive? What is the impact of the DFM on the time management of ICDS officials versus their other functions? Are there functions that CARE has performed which ICDS has gradually taken over or intends to take over? What kinds of resources would be needed to take on CARE functions? What extra time (on the part of CARE and ICDS staff) is needed to monitor the DFM model as compared to the vendor model? What are the difficulties envisioned by ICDS officials in replication of the DFM?

Impact on ICDS of DFM compared to the Vendor Model

Has the DFM provided better quality or quantities of food compared to the vendors? Has the DFM improved service delivery of the AWC? What are the difficulties encountered by AWCs with the DFM? Compared to the vendor model, has the DFM achieved the following ICDS objectives:

- Has it improved the nutritional and health status of children below age 6 and pregnant/lactating mothers?
- Has it laid a foundation for the proper physical development of the child?
- Has it reduced the incidence of mortality, morbidity and malnutrition?
- Has it achieved effective coordination of policy and implementation among various departments to promote child health?
- Has it enhanced the mother's capability to look after the normal health and nutritional needs of the child through proper health and nutrition education?

5. Implications for replication and scale-up

For this objective, the team considers that the relevant data will be covered in the above sections, and this objective will be met primarily through our analysis of that data. However, we will have a few general questions on this objective for CARE, and the state agencies that support the programme. For example, what — if any — are the differences of the roles of different agencies — CARE, ICDS, SGSY — during demonstration versus during replication?

ANNEX 5: SCOPE OF WORK

This Scope of Work is extracted from the Purchase Order between AED/FANTA and SSDS titled: Assessment of Decentralized Food Models in India's ICDS Program.

1) Objective

The objective of this assessment is to analyze and document: 1) the operational feasibility and financial viability of the decentralized food model (DFM) used in the Government of India (GOI) Integrated Child Development Services (ICDS) program; 2) the DFM's impact on the capacity of ICDS to operate its core program and achieve its primary objectives; and 3) implications of the findings from 1) and 2) for potential replication and scale-up of DFMs in ICDS.

Specifically the assessment aims to:

- 1) Analyze DFMs in Andhra Pradesh (AP), Madhya Pradesh (MP) and Orissa to assess the operational feasibility and financial viability of the different models, identify critical differences among the different models, and identify key factors and conditions influencing their effectiveness. Document the roles different stakeholders play in the DFM, e.g. ICDS and other government agencies, financial institutions, CARE, and other NGOs.
- 2) Assess the impact DFMs have had on core ICDS capacity and operations through factors such as ICDS functionaries' opportunity costs, direct costs of equipment and materials, human resource requirements, community focus and expectations, and frequency of and response to supply disruptions.
- 3) Identify implications the assessment findings have for efforts to replicate and scale up DFMs. Based on findings about the feasibility and viability of existing DFMs, examine the feasibility and viability of replication and scale-up of DFMs. Based on the impacts DFMs have on core ICDS activities in current areas, examine the implications scaling the models up would have for ICDS performance.

2) Background

Through its USAID-funded Integrated Nutrition and Health Project (INHP), CARE/India has supported on a pilot basis community-based DFMs that are implemented through women's self-help groups (SHGs). These pilots were designed to improve the efficiency of food procurement, processing, and distribution by avoiding or minimizing the supply chain constraints that are present in a centralized vendor-based food supply model, and to enhance the acceptability of food supplied to ICDS participants. Other perceived benefits of DFMs include expanded income generation opportunities for women from vulnerable sections of society and improved governance of the ICDS program.

CARE has piloted different variations of local food models in AP and MP. State governments in these two states and in Orissa have also experimented with community-based decentralized food models. State governments recognize the benefits of the decentralized food models and consistently approach CARE for technical assistance in establishing the models and drafting guidelines to promote the model across the state. With input from CARE, the government of MP replicated DFMs in 2003.

Developments at the central government level have also supported DFMs. In an order dated 7.10.2004, the Supreme Court recognized the benefits of the community-based food models and stated that "contractors shall not be used for supply of nutrition in Anganwadi Centers (AWCs) and preferably ICDS funds shall be spent by making use of village communities, self-help groups and Mahila Mandals for buying of grains and preparation of meals."

The central government has launched programs that support SHGs to engage in income generation activities. In 1999 the GOI restructured the various rural training, development and employment programs⁵² to launch Swarnjayanti Gram Swarozgar Yojana (SGSY). SGSY is a holistic program that focuses on grassroots social mobilization to support SHGs and self-employment for vulnerable populations. The objective of SGSY is to bring every assisted family above the poverty line within three years by providing a combination of training, bank credit, income-generating assets, infrastructure, marketing opportunities and government subsidies. District technical institutions plan, implement, and monitor SGSY activities with support and involvement of panchayati raj institutions (PRIs) and District Rural Development Agency (DRDA). Commercial, regional, and co-operative banks provide credit to SHGs.

DFMs represent a convergence of the GOI's SGSY and ICDS programs. SGSY supports SHGs to engage in income generation and identify markets for SHG-processed products. ICDS, often entirely reliant on a few vendors and food processors, is searching for cost-effective sources to provide dependable food products that meet the ICDS nutrition norms. In this context the DFM is a marriage of two complementary partners where the output of one provides input to the other.

The USAID Title II food aid program is phasing out of India from 2007 and 2009. As part of the phase out process, CARE is supporting ICDS to replicate and sustain key approaches developed with Title II support. Since 2000 CARE has been engaged in development and demonstration of DFMs and has experimented with various partnerships to implement them, such as PRIs and Mothers Committees. Based on the progress observed in areas where DFMs are being implemented and based on the demand from state governments for support to expand DFM coverage, CARE believes that the DFM is an important approach that it can support the ICDS to replicate on a larger scale. The final evaluation of INHP II⁵³ recommended that decisions about scaling up the DFM "be based on a detailed analysis of the full costs (both direct and indirect) [of the model]...and a better understanding of what would happen to the ability of the ICDS to deliver its core program if it assumes the workload for this model once scaled up."

In this context, USAID and CARE have requested the FANTA Project/AED to plan an assessment of the operational feasibility and financial viability of the DFM, the model's effect on the core ICDS program, and implications for replication and scale-up of the model.

3) Specific Activities

SSDS shall carry out the activities listed below. The timeframe for implementation of these activities is given in Section 5 below.

⁵² Earlier programs included IRDP, TRYSEM, DWCRA, SITRA, GKY and MWS.

⁵³ Final evaluation of CARE/India's RACHNA program included evaluation of INHP II.

- 1) ***Review of background documents.*** The vendor shall review a range of program reports and other related documents to understand the program context, the evolution and progress of the DFM, and results of other related assessments. Documents to be reviewed include: RACHNA final evaluation report; INHP phase-out plan documents; World Bank reports on the ICDS program; CARE reports on the DFMs; and reports and assessments by the World Bank, NABARD, SGSY, and others of SHG operations and viability in India and elsewhere.
- 2) ***Preparation of assessment protocol and tools.*** SSDS shall work in consultation with CARE and USAID and national consultants to design and prepare a protocol for the assessment. The protocol will consist of the research questions to be answered, data to be collected, sources of data, sampling method, data collection process, analysis to be performed, and an outline of the assessment report. The main topics and content to be covered by the assessment are given in Section 5 below.

Assessment tools will include:

- a list of key stakeholders to interview
 - a list of key questions for stakeholder interviews
 - forms for gleaning data from existing cost data and other data
 - data collection forms for field visits.
- 3) ***Leadership of assessment team.*** SSDS shall take responsibility for leadership of the assessment team, including coordinating responsibilities among the team members to ensure activities are completed efficiently. The team will consist of SSDS staff members and two consultants based in India with experience analyzing cost data and familiarity with community-based health programs, self-help groups, and/or the ICDS program. The assessment will require a 1-month TDY to New Delhi and ICDS sites by the assessment team. Continued coordination with team members following the TDY may be required for drafting of the assessment report.
 - 4) ***Planning meetings, piloting of data collection tools, and finalization of assessment protocol, methods, and geographic area.*** SSDS shall meet with CARE and USAID to finalize the assessment protocol and tools, plan the details of data collection, and finalize the specific locations for data collection. SSDS will plan allocation of data collection and analysis responsibilities among team members and prepare a schedule for data collection that meets the requirements of the protocol. Initial meetings in New Delhi with ICDS officials and other stakeholders (e.g. WFP, World Bank, NABARD, SGSY officials) will also be part of this process. SSDS shall pilot the data collection tools as needed.
 - 5) ***Data collection.*** SSDS shall coordinate and manage the data collection process, which will include collecting data on costs and operations of DFMs, stakeholder perceptions of the model's benefits and costs, changes in the program associated with the model, and relevant external conditions and factors. Key stakeholders contacted will include ICDS functionaries at central, state, district, block, and village levels, SHG participants, CARE representatives, program participants and community members, and representatives from

NGOs and other ICDS partner organizations. Detailed descriptions of the data collection topics are given in the Content section below.

Sources of data include:

- Field visits to ICDS areas where DFMs are in operation.
- Meetings with SHGs, with state, district, block, and village ICDS functionaries, and with other stakeholders.
- Cost data available with CARE, ICDS, and SHGs and collected from sites and functionaries.
- Results drawn from CARE and ICDS HMIS.
- CARE reports on DFMs in MP, AP, and Orissa.
- RACHNA final evaluation report and other program reports.
- Reports from ICDS, World Bank, and others on the ICDS program.
- Documentation by World Bank, NABARD, and SGSY of SHG operations and viability in India and elsewhere.
- Interviews with representatives from ICDS at all levels, CARE, MoH, SGSY, program participants, and other stakeholders.

- 6) ***Analysis of data.*** SSDS shall manage the assessment team in analyzing the data collected with a focus on addressing the three general topic areas described in the Objectives section above (effectiveness and financial and operational viability of DFMs; effects of DFM on ICDS core program; and implications for replication and scale-up) and addressing the specific content areas detailed in the Content section below. Analysis will involve cost analysis; compiling, stratifying, consolidating, and summarizing qualitative data; identifying relevant trends; comparisons across models; and integration of quantitative data with related qualitative data.
- 7) ***Presentation of preliminary findings.*** SSDS shall prepare a brief write-up and PowerPoint presentation and present progress and preliminary findings to USAID and CARE prior to departure from the TDY. Since data analysis may not be entirely completed at this time, the presentation will focus on the progress of the assessment to date, key observations, initial results, and the direction of preliminary findings. The presentation and discussion will be an opportunity for in-depth feedback from USAID and CARE at an early stage of the documentation of findings. If necessary, CARE or others may provide additional information needed to fill gaps.
- 8) ***Drafting of report.*** SSDS shall be responsible for production of the report and shall write the bulk of the report, drawing on other team members to write specific sections as needed. The assessment report will follow an outline agreed to with USAID, CARE, and FANTA as part of the assessment protocol. The report will include descriptions of the motivation and objectives for the assessment, the questions addressed, sources of data, methodology, findings, discussion of findings, conclusions and recommendations, and areas for further study, if any. Appendices will include scopes of work for the team, summaries of data, and any questionnaires used.

- 9) **Revision of Production of final report.** SSDS shall revise the report to incorporate feedback provided by CARE, USAID, FANTA, and external reviewers on the draft report. SSDS shall also prepare a final PowerPoint presentation summarizing key findings to accompany the report.

4) **Assessment Content**

Specific suggested content to be covered by the assessment is listed below, organized according to the topics in the objectives given in Section 1. This content is intended to guide and inform preparation of the assessment protocol, the data collection process, and the assessment report.

Documentation of the models (Objective 1)

- Describe the operation of DFMs.
- Identify the different types of models being implemented and the key differences among them.
- Discuss key factors influencing the effectiveness of the models.
- Identify key challenges to implementation of the models and how these challenges have been addressed.

Evaluation of the financial viability of DFMs (Objective 1)

- List the various cost parameters. Categorize the fixed and variable costs.
- Determine the cost of monthly production and the break-even point for cost recovery. Identify profit margins and sustainability prospects.
- Identify current and potential sources of financial assistance and evaluate their long term viability.
- Evaluate the extent to which the DFM is financially viable and sustainable. Where differences in viability and sustainability may exist among different models, identify these differences and discuss factors that lead to these differences.
- Identify “must have” prerequisites for a financially viable DFM and identify the prerequisites that need to be contextualized to the local environment.
- Identify conditions that affect the financial viability of the models.
- Evaluate the effect of market fluctuation on financial viability and income. Consider the options available to address/contain market fluctuations.
- Recommend the steps and partnerships that can address market fluctuations and the role CARE and others can play in promoting a more sustainable model that minimizes the impact of market fluctuations.

Evaluation of operational feasibility of DFMs (Objective 1)

- List the steps and activities involved in operationalizing the DFM, including steps for SHG formation and capacity building of SHGs to take up food processing, packaging and delivery to AWCs.
- Describe the roles CARE, ICDS, and other government programs play to support DFMs, including cultivating, facilitating, and supporting SHGs. Discuss any differences in the roles during demonstration vs. during replication.
- Evaluate and document the intensiveness of human and other resources required to adequately implement the DFM.

- Identify conditions that affect the operational feasibility of the models, including conditions related to logistics, food availability, SHG qualities, and external support.
- Identify any critical differences among the different models that significantly affect their feasibility in terms of logistics and other operational aspects.
- Compare performance of the DFM to that of the vendor based model in minimizing and managing supply chain constraints such as skews in food distribution, storage requirements, delays on food availability, food damage and loss.
- Identify the main challenges to DFM operations and how these challenges have been addressed. Evaluate to what extent the challenges have or can be sufficiently addressed.

Assessment of DFM impacts on ICDS core program (Objective 2)

- Document the main components of the ICDS program and its primary objectives.
- Document whether and how in DFM areas ICDS has generated the human, financial, and other resources required to implement the models.
- Evaluate the effect the DFM has on the capacities and activities of ICDS management (DPO, CDPO, supervisors). Consider factors such as the opportunity costs of managing the DFM, direct costs of equipment and materials, involvement by management in community activities, and sense of responsibility for supply chain issues.
- Evaluate the effect the DFM has on the services Anganwadi Workers (AWWs) provide (health and nutrition education, growth monitoring, etc.). Consider factors such as opportunity costs, focus of AWWs, program expectations of community members, and emphasis of supervisors.
- Evaluate the effect the DFM has on supply chain issues and on reliable and adequate provision of nutrition supplements to AWCs, e.g. frequency of and response to supply disruptions.
- Evaluate the effect the DFM has on the quality and nutrient content of food products provided at AWWs.
- Where possible, identify steps or conditions that enhance the DFM's positive impacts on the ICDS core program and/or decrease its negative impacts.
- Assess the effects the DFM has on the capacity of ICDS and other implementers to achieve each of the primary objectives of ICDS.

Identification of implications for replication and scale-up (Objective 3)

- Identify factors and conditions affecting the operational feasibility of scale-up. Consider logistical factors, establishment of sufficient numbers of SHGs, ICDS human resource implications, cultural conditions, climatic conditions (food storage and safety), and local food product availability.
- Identify factors affecting the financial viability of scaling up the decentralized food model. Consider possible economies of scale, efficiencies, additional costs associated with scale-up (e.g. equipment, supervision, etc.), and availability of long-term financial support through financial institutions.
- Identify gaps that would need to be filled by ICDS or others to initiate and maintain the DFM without CARE's direct involvement and presence.

- Identify conditions recommended to be in place prior to replication, and conditions to be in place prior to scale-up.
- Based on the effects that existing DFMs have had on the ICDS core program and objectives, identify possible implications of DFM scale-up on ICDS capacity, performance, and achievement of objectives.
- Identify partnerships or other options that may reduce negative effects of scale-up on core ICDS activities.
- Identify possible implications DFM scale-up on quality control and consistency in meeting required ICDS standards of services.