

Review Article

Community based approaches to prevent and control malnutrition

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Community based nutrition programmes (CBNP) are increasingly being seen as a key turning point in implementation strategies leading to food and nutrition improvement as a sound basis for socio-economic development. In order to be effective and successful, CBNP require a constellation of methods and services planned from the community along with policy support for effective implementation, reaching the unreachable and empowering those at the grass roots. These also need to be guided and monitored using a set of indicators such as essential minimum needs indicators specific to the community's needs. The community based approach has also been embraced at the global level with the Millennium Development Goals, advocating achieving a set of eight goals ranging from reducing poverty and hunger to improving educational opportunities for all children and forming stronger global partnerships for development. Lessons learned from CBNP in Asia show that in order to be effective, the programmes must be adopted at national level and implemented at community level. National level leadership and commitment to sound nutrition improvement policies and goals, must be combined with basic services, mass mobilization, people empowerment and actions at community level.

Key Words: community-based approaches, prevention and control, malnutrition

INTRODUCTION

Community-based food and nutrition programs (CBNP) have been implemented in many countries. They have in common nutrition or nutrition-related objectives, be it the broad objectives of reducing the prevalence of malnutrition or improving household food security, or more specific objectives related to a single micronutrient or a single nutrition activity such as the promotion and protection of breast feeding. Community based nutrition programs (CBNP) which in essence evoke scope for community participation, must be facilitated by effective policy implementation. In order to be both effective and successful in reducing malnutrition, CBNP require appropriate institutional arrangements, mechanisms, methods and services planned from the grass roots along with support from policy makers to the implementers, who are actually those at the grass roots.

There are now a number of successful programs, and a close examination and analysis of these can help us to understand the process of achieving success. This paper examines: the role and scope of the community based programs in nutrition, health and other development issues, processes and system of the community based programmes and some experiences and applications from Asia with relevance for future work in developing countries.

METHODS AND PROCESS

Community based nutrition programmes need to be jointly developed and implemented by a team of micro level planners (those at the community and sub-district and district

levels) and micro level implementers at the grass roots. Most of this can be achieved through *effective social mobilization strategies*, for which community level volunteers or mobilizers are identified and trained on a community wide scale. Such a system needs to be built into a logical *developmental process*, for which *institutional arrangements* at both central and micro levels of administration must be in place.

The CBNP strategy is based on the premise that in order to address problems of malnutrition on an equitable and sustainable basis, the community needs to be involved in the entire process of developing and implementing nutrition and developmental projects which can address the problems of malnutrition, rampant among vulnerable groups especially pregnant women and young children. Such projects would need to be (primarily) planned and executed by the community, but supported and encouraged by the sub-district and district levels.

The micro level planning process involves the community (village committee) and community leaders and district and sub-district team who are well represented from the sectors of agriculture, rural development, education, health

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and related areas. Related technical professionals and the local government can also be represented in many cases. Such a planning process would then lead service providers (the district and sub-district level officials) and community leaders to collectively set up clear, measurable goals and objectives and working plans.

This can be developed from *simple indicators*, which are based on essential minimum needs, required by the community to lead a well-nourished and improved quality of life. Coordination of the sectors is key to providing an integrated approach to the community based programmes.

Community mobilization and empowerment

Crucial to the community based approach is the selection and empowerment of community level volunteers or mobilizers. This involves adopting a 'community volunteering system' where community volunteers are selected on the basis of a sociogram process in which the identification and selection of the volunteers is done in consensus with and through a shared view of all the households and community members. The classical case of community health volunteering is seen in Thailand¹, where one mobilizer community volunteer takes responsibility for motivating and mobilizing a cluster of 10-20 households in a community towards making use of available basic services in the community. She or he also motivates them to engage in food-based activities and nutrition-relevant actions which are compatible within the community's context. The community volunteers essentially serve as 'change agents' and as community leaders and are trained in problem solving and community mobilization techniques. The selected community volunteers are given appropriate government training to enable them to function as mobilizers with the required knowledge and motivation to translate vital nutrition improvement strate-

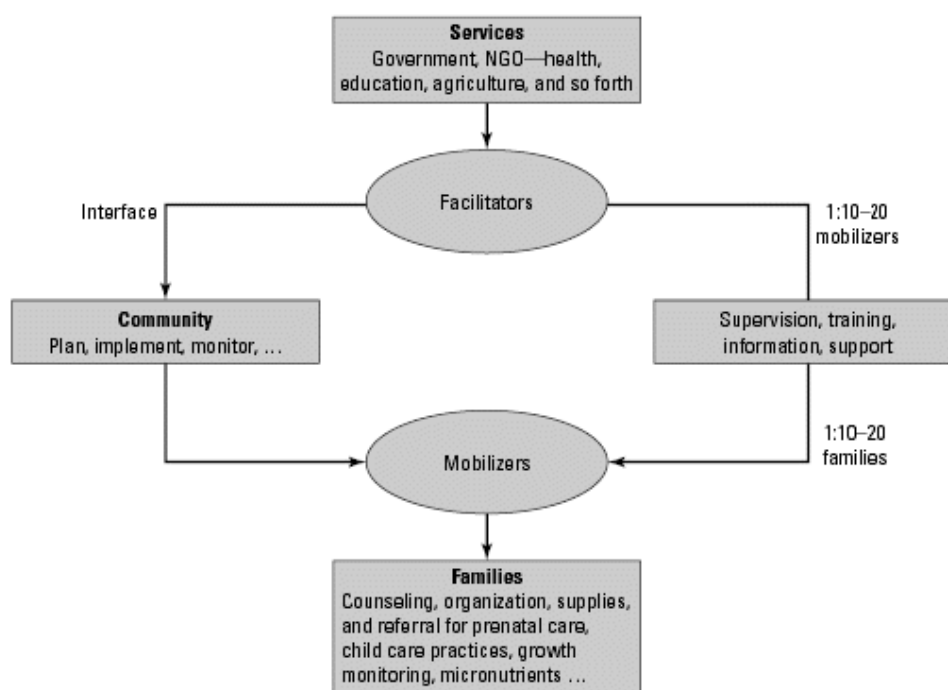
gies into concrete actions. Such a system has been linked to basic service delivery structures in order to significantly improve coverage and outreach of services. This has contributed in a large measure to the overall community efforts for the alleviation of malnutrition. Studies from Asia² have shown that this could be made possible through a network of community volunteers (mobilizers) who work in close collaboration with the community.

Linking CBNP to service delivery structures for addressing malnutrition

A sound framework of methods and services planned from the grass roots backed with support from the service delivery system can be well provided by CBNP. The implementation of the community based programs envisages carrying out the following activities: (a) suggest most appropriate institutional arrangements; (b) provide approaches for strengthening multi sectoral collaboration and promoting community development based on the use of essential minimum needs indicators; (c) develop the process of social mobilization for implementing effective household and community level action; (d) provide approaches and guidance for capacity building at district, sub-district and community levels through appropriate training; (e) develop appropriate and practical sets of relevant menus and activities for implementation by the community.³

MODELS OF COMMUNITY BASED PROGRAMMES

There have been several major intervention programmes in operation in Asia, which have been largely service driven but with attempts made to elicit close involvement and participation of the community. Primarily it is important to strengthen these programmes on the



Source: Adapted from Tontisirin (1996, personal communication).

NGO = nongovernmental organization

Figure 1. General Structure for Community-based Programmes, Based on Thailand's Programme

understanding that nutritional status is the most important outcome indicator to measure progress against poverty and malnutrition.

Thailand case study

Thailand has addressed malnutrition in national development policies since the mid-1970s and stands out as a unique example for a moderately large developing country (61 million population) which has been successful in rapidly reducing the prevalence of malnutrition, and has been sustaining that effort for almost 30 years. One key to this success has been the development and implementation of a Poverty Alleviation Plan that focused strongly on people's participation, instead of leaving the government to shoulder the burden alone. A primary health care approach was used as a practical, community-based and participatory mechanism to address the problems of health and malnutrition. It was recognized that malnutrition had multiple causes and its prevention required a multisectoral collaboration involving the ministries of Public Health, Agriculture, Education and Interior.

Planners recognized that malnutrition was a symptom of poverty and that efforts directed to alleviating poverty needed to focus on improving nutrition as one of its principle indicators. To increase the human resources capacity, health volunteers were selected by means of a sociogram process, resulting in a ratio of about one volunteer (mobilizer) per ten households. Those village health volunteers were trained and made responsible for mass social mobilization. Today there are some 700,000 volunteers or mobilizers covering almost every village in the country. The poverty alleviation plan was broad, being directed towards quality of life that included health and well-being. This highly participatory and multisectoral process which was put in place for the purpose of improving the well-being of all was the key to Thailand's success. The initial setting up of the process required considerable effort, time and energy, but once in place the system became relatively easy to sustain with a low operational cost.⁴

Lao People's Democratic Republic (Lao PDR)

The Government of Lao PDR in collaboration with the Food and Agriculture Organization of the United Nations implemented a novel pilot project on the promotion of home gardens for improved nutritional well being among rural communities in Laos.⁵ The project developed and implemented a creative process that evolved from participatory planning of its action plan for implementation including the community and district levels right up to the policy makers in the Department of Agriculture. Through an integrated home gardening programme supported with nutrition education, model home gardens were established by each of the target households and communities in four villages of the central regions of Lao PDR.

One of the major project outputs was the development of provincial, district and community level capacities to implement and manage home gardening and nutrition improvement programmes. Field demonstrations were key outputs of the transfer of technology component. Household horticulture and small scale fish farming provided opportunities for nutrition and income, while small

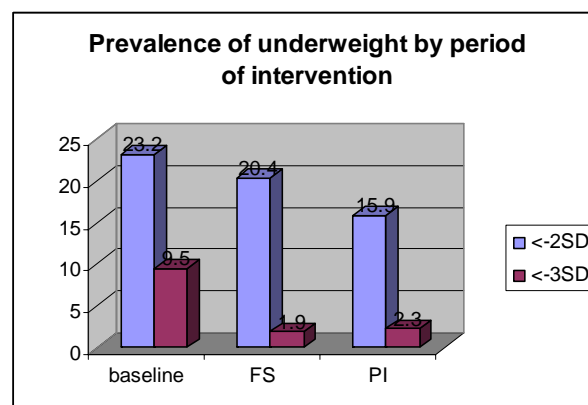


Figure 2. Percentage of moderate and severe underweight children in three periods of project implementation. FS: First semester; PI: Post intervention

livestock production mainly served as means of accumulating capital. At 18 months of implementation, an increase in the production of vegetables, fruits, poultry and fish was noted in the target households with an awareness created for enhancing the consumption of these home grown produce. Specifically, the consumption of green leafy vegetables and fish showed an increase.

Impacts on nutrition. Comparing from baseline to the post intervention period, rates of moderate and severe underweight declined from 23% to 15.9% and from 9.5% to 2.3% respectively, being significant for severe malnutrition. Decline in rates of malnutrition in children under five years demonstrated evidence of project impacts on nutrition (Fig. 2). The baseline survey found that the prevalence of underweight (WFA<math><-2SD</math> from the median of the reference population" as moderate malnutrition) was 23.2% and 9.5% (WFA<math><-3SD</math> from the median of the reference population" as severe malnutrition). After six months of implementation of the pilot project along with nutrition education, a semester anthropometric measurement showed that the prevalence of underweight declined to 20.4% of <math><-2SD</math> and to 1.9% of <math><-3SD</math>. The final anthropometric measurement was taken 9 months later and it was found that the prevalence of underweight declined to 15.9%. The rate of severe underweight declined from the baseline to post intervention period ($p = 0.02$).

The lessons learned and some of the best practices for both policy and technology are being considered for scaling up at national levels.

Bangladesh

The Integrated Horticulture and Nutrition Development Project (IHNDP) implemented by the Government of Bangladesh⁷ provides a case for incorporating a nutrition orientation to horticulture programmes and policies with particular implications for horticulture based nutritional security. The project's efforts were directed towards creating an environment of food production for consumption and equipping the rural farmers with the knowledge, technology and skills to prepare nutritious foods that can be consumed by themselves and their households thereby improving dietary quality. An attempt was made to

diversify the food habits of the target groups and promote the consumption of horticultural crops as a sustainable solution to the problem of micronutrient malnutrition.

Food and dietary consumption. Due to the project interventions the consumption of leafy vegetables, yellow and orange vegetables as well as vitamin C rich fruits also increased in the project households. Over 60 % of project covered households started giving complementary foods to infants between the ages 5 to 7 months along with continuation of breast feeding as compared to only a third of non project households who did so. A substantially higher energy, protein and micronutrient intake was noted among the project covered households compared to non-project households. Iron intake was significantly higher in adult women, vitamin A intake was significantly higher in children, adolescent girls and adult women, while vitamin C intake was significantly higher in children and adult women and calcium intake was significantly higher in adolescent girls in the project covered households. The observed differences were consistent even after adjusting for the differences in the farm size of the project and control households. It was also seen that the diets of the project covered households were more diversified than control households.

Group and community savings. Small self help groups acted as a vehicle for technology dissemination in the project mostly with the landless, marginal women farmers. Of a total of 1292 groups organized, 82 percent were female. The self-help group of farmers were consolidated and reorganized by the community. The consolidation process was based on the factors such as regularity of meetings, maintaining bank account, regularity of savings

and horticultural production/processing activities at individual and group levels. The farmers deposited savings regularly in their bank accounts and the savings are being utilized in ways such as to protect them from the money lenders, paying for land lease for horticultural crop production and purchasing inputs. The farmer groups organized regular meetings and discussed issues of their activities on horticultural production, post-harvest management practices, and food processing, marketing prospects, experiences of in-country study tours, micro-capital grant support and nutrition. Such a group approach was seen to have a very positive effect on the overall service delivery process.

COMMUNITY RESOURCES FOR DIETARY IMPROVEMENT

Dietary modification and diversification are examples of some initiatives that can be undertaken through community based approaches (Table 1) Such an approach can be used to enhance understanding of micronutrient deficiency in the community, and help to empower them to be more self-reliant towards addressing its nutritional problems.⁸

The different sectors need to be linked in such community based programs to build a true multisectoral approach. Developing policy which is strongly supportive of community-based program implementation can and should greatly strengthen and improve existing situations.

CONCLUSION

The ultimate goal of community based programs is to impact on the community situation, lives and nutrition status of the population. Systematic management

Table 1. Inputs and outcomes for prevention and control of micronutrient malnutrition through community based programmes

Input	Output	Outcome
Dietary improvement: Food production for consumption; Information, Education and Communication (IEC); Food based dietary guidelines (FBDGs); complementary food production	<ul style="list-style-type: none"> ▪ Number of home gardens; number of chicken and duck raising activities; number of community fish ponds ▪ Consumption of micronutrient rich foods (bioavailable) food combinations ▪ Dietary intake of enhancers ▪ Avoidance of inhibitors 	<ul style="list-style-type: none"> ↑ Knowledge, Attitude and Practice (KAP) towards usage of micronutrient rich foods; ↓ micronutrient deficiency prevalence → gradual elimination major micronutrient deficiencies (IDA and VAD)
Food fortification: Iodized and double fortified salt; other foods	<ul style="list-style-type: none"> ▪ % household usage of iodized/ double fortified salt; % individual and household use 	<ul style="list-style-type: none"> ↑KAP towards usage of micronutrient rich foods; ↓ IDA and IDD prevalence → elimination of IDA and IDD
Basic health services and community participation: Antenatal Care (ANC) , immunization, parasitic control, hygiene and related activities/services	<ul style="list-style-type: none"> ▪ Frequency of contacts with pregnant women (minimum 4 Antenatal Care contacts); % coverage of target groups 	Improved pregnancy outcomes (increased birth weights); ↓ IDA prevalence; ↓ worm infestation rates
Agricultural extension services:	<ul style="list-style-type: none"> ▪ Mobilizing small farmers, households, women groups towards food production activities; ▪ number of poultry vaccinations held 	<ul style="list-style-type: none"> ↑ Knowledge, Attitude and Practice (KAP) towards usage of micronutrient rich foods; increase in household income; ↓ prevalence of micronutrient deficiency → gradual elimination

information systems at different levels and forms of presentation for different purposes and objectives need to be established. For example, anthropometric data collected at community level is used for individual surveillance, household and community action as well as for sending it along the upward line of command. Food and nutrition indicators will need to constitute a part of the essential minimum needs indicators as pointed out earlier.⁹

Fundamental to the sustainability of programs in a community is the ability of its members to make enlightened decisions and then be able to implement them. Much of the actions needed to achieve the objectives laid out by community based programs involve relatively little additional cost to governments, where government staff salaries are covered. It entails assigning higher priority to integrated nutrition training, devolving responsibility to the district, sub-district and community levels, and carrying out the process of social mobilization for empowering community volunteers, individuals and communities to take action; and fostering greater multisectoral collaboration. What is needed is the political will to install in the community a strong sense of ownership and to strengthen and support community leaders and volunteers with appropriate tools to implement actions for improvement of nutritional status.

AUTHOR DISCLOSURES

Kraisid Tontisirin and Lalita Bhattacharjee, no conflicts of interest.

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