Nutrition advocacy and national development: the PROFILES programme and its application

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Investment in nutritional programmes can contribute to economic growth and is cost-effective in improving child survival and development. In order to communicate this to decision-makers, the PROFILES nutrition advocacy and policy development programme was applied in certain developing countries. Effective advocacy is necessary to generate financial and political support for scaling up from small pilot projects and maintaining successful national programmes. The programme uses scientific knowledge to estimate development indicators such as mortality, morbidity, fertility, school performance and labour productivity from the size and nutritional condition of populations. Changes in nutritional condition are estimated from the costs, coverage and effectiveness of proposed programmes. In Bangladesh this approach helped to gain approval and funding for a major nutrition programme. PROFILES helped to promote the nutrition component of an early childhood development programme in the Philippines, and to make nutrition a top priority in Ghana's new national child survival strategy. The application of PROFILES in these and other countries has been supported by the United States Agency for International Development, the United Nations Children's Fund, the World Bank, the Asian Development Bank, the Micronutrient Initiative and other bodies.

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Introduction

Although it is generally recognized that good nutrition is a desirable goal of development and that direct nutritional intervention is often required in relief situations, investment in nutrition programmes has been relatively poor because:

- nutrition has been regarded as an outcome of rather than an input into development;
- nutrition programmes have been viewed as less cost-effective than some other investments.

However, good nutrition can have a significant influence on human and economic development, and there are cost-effective ways of improving nutrition. Furthermore, it is possible to quantify the relationships in question.

The scaling up of nutrition programmes from small pilot schemes to national programmes requires expansion in the financial, political and other dimensions. It is not enough, of course, to attain the increased scale: maintaining it is vital. This may prove difficult in the face of intense competition for resources and political support, and effective advocacy is therefore essential.

The present paper describes a data-based approach to nutrition policy development and advocacy which has been successfully applied in several developing countries. At its heart is a set of computer models estimating the consequences of nutritional deficiencies and the cost-effectiveness of nutrition programmes that alleviate them.

The PROFILES programme

PROFILES began as a stand-alone software program in Borland Pascal for DOS (PROFILES 1) and Windows (PROFILES 2) which calculated and graphically displayed the consequences of nutritional deficiencies in populations. It was developed into a package forming the core of a nutrition policy development and advocacy process. Later versions use commercial spreadsheet software for modelling and commercial presentation software for graphic communication. The later software provides increased transparency with regard to the workings of the models, greater ease in modifying and adding models, and a far broader access to settings in the developing world than was the case with the original Pascal programs.

PROFILES has been used to:

- estimate the consequences of nutritional deficiencies in populations;
- estimate the cost-effectiveness of proposed nutrition programmes;

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- communicate the results to various audiences.

Information can be presented in a slide show format with predetermined sequences of screens, or in an interactive format where data and assumptions can be quickly modified so that the effects on developmental outcomes can be seen. Presentations often compare two scenarios, e.g. one in which current nutritional status and practice remain unchanged and one in which national nutritional goals are achieved in five years.

Three types of model are used (Fig 1):

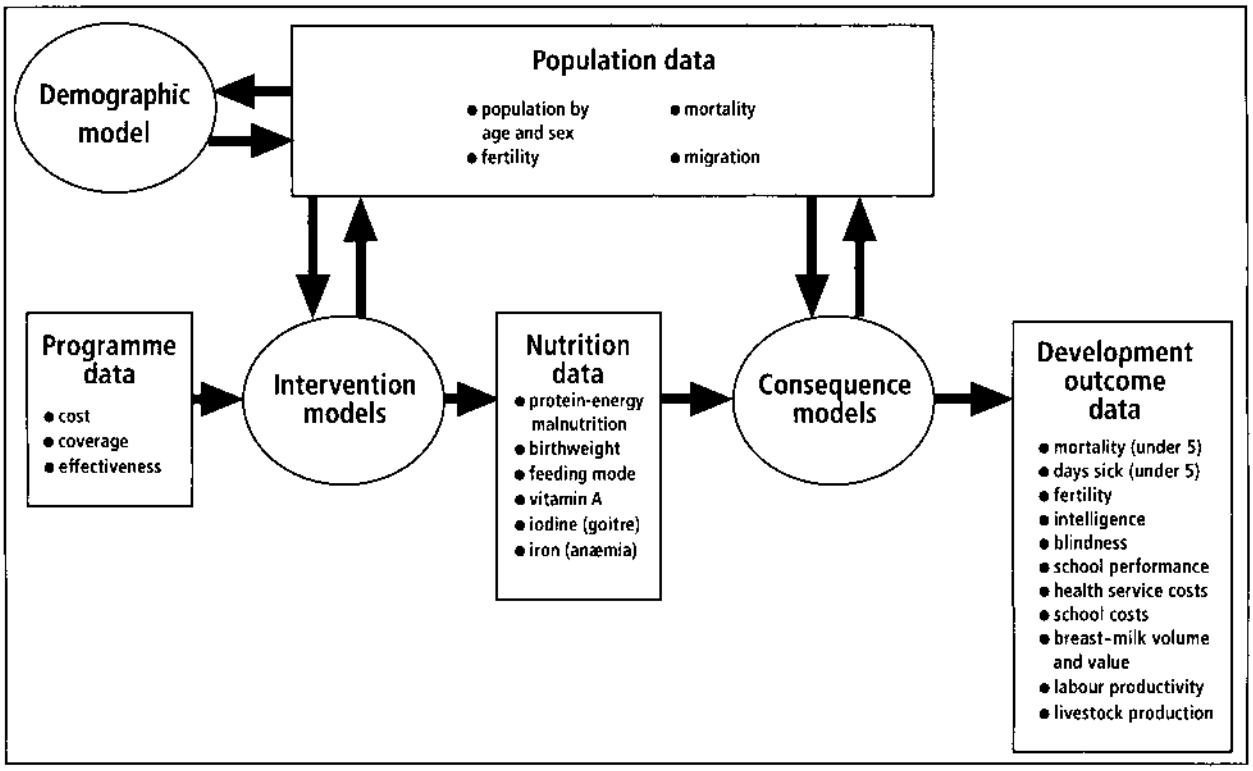
- demographic;
- intervention;
- consequence.

The demographic model projects population and numbers of births and deaths by age and sex from trends in fertility, mortality and migration. PROFILES breaks down infant deaths and population by month of life because the etiology of mortality and other consequences changes substantially from month to month during infancy, requiring different models during the first year of life.

The intervention model computes the effect of proposed programmes on various indicators of the nutritional condition of populations. PROFILES characterizes nutrition programmes by cost, coverage and effectiveness. Programme costs in a given year include annual fixed costs, maintenance costs proportional to the number of people covered, and enrolment costs proportional to the number of new individuals enrolled during the year. Costs can also be identified by source: government, external donor, commercial, household cash, and household in-kind. *Coverage*, which typically starts low and increases as a programme matures, is the fraction of persons in the primary target group reached by a programme. *Effectiveness* is the fraction of covered persons who pass from a deficient to a sufficient state in the year as a result of a programme. *Programme impact* is the product of coverage and effectiveness.

Consequence models estimate various developmental outcomes as a function of the size and nutritional condition of populations. Each nutritional condition is described by one or more indicators that apply to individuals, and by several variables. The indicators relate to protein-energy malnutrition, vitamin A, iodine, iron, birth weight and feeding. Most of the variables are prevalences of the nutritional indicators, e.g. of normal, mild, moderate and severe weight-for-age children. The consequence models are grouped into 11 categories, namely child mortality, child morbidity, maternal mortality, fertility, vision, intelligence, school performance, government health and education expenditures, volume and value of breast milk, labour productivity, and other economic consequences. Many features of consequence models are illustrated in the examples given below.

Fig. 1. **Conceptual framework of models and data files in PROFILES. The three types of models in PROFILES (demographic, intervention, consequence) use data from the four primary data files (population, programme, nutrition, development outcomes) to estimate future values of variables in these files.**



Note: Additional details are available (*11*).

In the model linking weight-for-age (WA) to childhood deaths, the latter are a function of WA prevalence variables, which are determined by the relative risk of death of children in different WA categories. Typically, the relative risk of death in children who are mildly, moderately and severely underweight-for-age relative to normal children are set at 2.5, 4.6 and 8.4 respectively (*1–3*). Mortality rates for the WA categories can be estimated for a base year using a population attributable risk approach, and then combined with estimates of WA prevalence, population, and the mortality rate in future years in children aged under five years, so as to obtain an estimate of numbers of deaths by WA category. When the mortality rate changes from year to year in the original demographic projections, the WA mortality rates are adjusted proportionally to force consistency with the overall under-five mortality rate. This model calculates the number of deaths in a given year as a function of 10 independent variables, namely the population of children in that year, the four WA prevalence variables in that year, the four mortality rates associated with the four WA categories, and the ratio of the under-five mortality rate in the given year to that in the base year in the original population projections. Nutrition interventions directly influence mortality by changing the prevalence of the different WA categories, and influence it indirectly in the long term by modifying population size and distribution. Table 1 illustrates these calculations in the Senegal application.

The literature provides little guidance on the interactive effect of multiple simultaneous nutritional deficiencies on mortality. PROFILES assumes that relative risks multiply and that prevalences or incidences are independent, with the following exceptions:

- the effect of iodine deficiency is assumed to be additive (*4*);
- three pairs of indicators are assumed to be non-independent (WA and vitamin A status; feeding mode and vitamin A status; iron status during pregnancy and birth weight).

Another consequence model computes the volume of breast milk produced in a population from estimates of the average daily volume of breast milk per mother as a function of child age and feeding mode (full, partial or no breastfeeding), and the prevalence of the feeding modes. The imputed market value of the breast milk is estimated by using the price per litre of the most common substitute for breast milk (e.g. cow's milk in rural areas and formula in urban areas). Values for urban and rural populations are calculated separately because of the large differences in feeding practices and in breast-milk substitutes between urban and rural areas (*5–7*).

Table 1. **Predicted deaths in children aged under five years for two nutrition scenarios: PROFILES Senegal application**

Scenario	Item	1995	1996	1997	1998	1999	2000	Total
Demographic projections	Live births (1000s)	351	357	363	369	375	381	
	Under-five population (1000s)	1441	1495	1548	1598	1647	1701	
	Under-five deaths	29 131	29 258	29 727	30 037	30 187	30 819	
	Under-five deaths per 1000 live births	83.0	80.3	78.9	77.2	75.3	74.7	
A: No change (baseline)	% normal weight-for-age	76.5	76.5	76.5	76.5	76.5	76.5	
	Total under-five deaths	29 131	29 258	29 727	30 037	30 187	30 819	179 159
	Nutrition-related under-five deaths	10 070	10 112	10 276	10 383	10 435	10 653	61 929
B: Improved nutrition	% normal weight-for-age	76.5	77.8	79.2	80.5	81.9	83.2	
	Total under-five deaths	29 131	28 699	28 598	28 327	27 895	27 894	170 544
	Nutrition-related under-five deaths	10 070	9557	9147	8673	8143	7728	53 318
	Lives saved in comparison with scenario A	0	555	1129	1710	2292	2925	8611

This table shows yearly estimates of deaths among children aged under five years for two scenarios. Scenario A serves as the baseline, while scenario B estimates the impact of a hypothesized nutritional improvement programme that reduces the prevalence of mild underweight by 30% and of moderate and severe underweight by 25% each over six years in a linear fashion. Both scenarios assume relative risks of death of 2.5, 4.6 and 8.4 for mildly, moderately and severely underweight children respectively throughout the six-year period and use the population attributable risk procedure to make the estimates. Scenario A assumes the UN median population projections and prevalences of mild, moderate and severe underweight in children under five years of age equal to the 1993 Demographic and Health Survey findings of 17.3%, 5.0% and 1.2% respectively throughout the six-year period. The under-five mortality rates for each nutritional status category both equal the rates implicit in the UN projections, dropping gradually over the period in proportion to the UN total under-five rate. The hypothesized programme saves 8611 lives over the six-year period. The assumed values for relative risk are based on reported data (*1–3*) that are reliable for children aged 6–59 months but not necessarily for children under six months of age. Consequently, the estimates shown above may not be reliable because they include children aged 0–5 months.

PROFILES contains several consequence models relating nutritional conditions to worker productivity. In some, *future* productivity losses are the result of permanent damage from nutritional insults early in life. In others, *current* productivity of adult workers is reduced by temporary effects of current malnutrition. In others again, productivity losses are related to the death of a potential worker. Future productivity losses caused by protein-energy malnutrition in early childhood illustrate many features of the worker productivity consequence models. There is extensive evidence of the relationship between protein-energy malnutrition and productivity. A study in Guatemala showed that children receiving a high-protein, high-energy supplement grew better than controls, maintained this growth advantage through young adulthood (*8*) and performed better in physical capacity tests (*9*). In the Philippines, an additional 1.38% was earned by sugar cane workers for every 1% increment in height (*10*); this result was used by PROFILES to estimate potential labour productivity gains from reduced child stunting (Table 2). The model assumes that absolute height deficits at two years of age are maintained into adulthood. The future lifetime earnings of stunted children are discounted back to the present after adjustment for normal mortality, unemployment and lower productivity.

Applications

Bangladesh

In collaboration with UNICEF and the World Bank, Bangladesh undertook a policy development and advocacy process, incorporating PROFILES, aimed

Table 2. **Five-year projection of discounted future wages lost because of childhood stunting: PROFILES Philippines application**

Scenario	Item	1994	1995	1996	1997	1998	1999	Total
	Population 2–2.9 years (1000s)	1885	1878	1817	1836	1850	1862	
A: No stunting	% any stunting at two years of age	0	0	0	0	0	0	
	Present value of all lifetime wages (US$ millions)	10 320	10 282	9948	10 051	10 129	10 194	
B: No change in stunting prevalence from baseline	% any stunting at two years of age	67.6	67.6	67.6	67.6	67.6	67.6	
	Present value of all lifetime wages (US$ millions)	10 059	10 022	9696	9797	9873	9936	
	Present value of wages lost because of stunting (US$ millions)	261	260	252	254	256	258	1541
C: Improved nutrition - reduced moderate and severe stunting	% any stunting at two years of age	67.6	64.1	60.5	56.9	53.3	49.8	
	Present value of all lifetime wages (US$ millions)	10 059	10 038	9728	9846	9938	10 018	
	Present value of wages lost because of stunting (US$ millions)	261	244	220	205	191	176	1297
No change vs. improved nutrition	Net gain of improved nutrition over no change in present value of lost wages (US$ millions)	0	16	32	49	65	82	244

The projections in this table illustrate the procedure used by PROFILES to estimate the present value of future productivity losses caused by stunting in childhood. The figures show the effect of reducing the prevalence of moderate and severe stunting by half in five years. The calculation in scenario A (no stunting) assumes an annual wage equal to that of the average agricultural worker's wage in 1991 (US$ 516), a 64.5% labour participation rate, and a lifetime discount factor of 16.45 that assumes a 3% annual discount rate, normal mortality, and labour force entry and exit at 15 and 64 years respectively, all discounted back to the age of two years. In the no change scenario the prevalences of mild, moderate and severe stunting at two years of age are assumed to be 32.0%, 25.4% and 10.2% respectively (summing to 67.6%) in all years, and the estimated discounted lifetime earning makes the same assumptions as in scenario A, together with the assumptions that mildly, moderately and severely stunted two-year-olds have adult height deficits of 3.125%, 4.375% and 6.25% respectively, that the productivity elasticity with respect to height is 1.38, and that two-thirds of the jobs are agricultural or heavy manual labour to which the height-productivity relationship applies. In scenario C (improved nutrition) the prevalence of moderate and severe stunting each reduces by half while mild stunting remains unchanged at 32.0% in all years, and the present value of future wages lost because of childhood stunting is calculated as in scenario B.

at making nutrition a national priority. In 1992–1993, PROFILES was used to call attention to the enormous nutritional problems in the country. Attention was shifted to specific action programmes in 1993–1994, most notably a community-based young child nutrition programme and a salt iodization programme.

Local scientists, planners and programme managers were heavily involved in adapting the PROFILES models. A committee of some 20 local scientists and planners reviewed and modified the consequence models for general advocacy; intervention models for specific programmes were developed subsequently. Representatives of the Ministry of Health and UNICEF reviewed all the consequence models and selected the following ones for inclusion in a 20-minute presentation:

- child deaths averted by reducing WA undernutrition in preschool children;
- fewer births of cretins and children with low intelligence quotients through elimination of iodine deficiency in pregnant women;
- increased breastfeeding in urban areas and monetary savings as a result of reduced use of substitutes;
- increased productivity of agricultural workers because of a reduction in iron-deficiency anaemia.

The magnitude of the potential benefits over a seven-year period impressed many audiences: over a million child deaths averted, 630 000 fewer mentally deficient individuals, US$ 178 million saved as a result of increased breastfeeding in urban areas, and a productivity increase of nearly $3 billion among agricultural workers. These results were crafted into a script and graphics presentation, using publications that had been well received in Bangladesh as guides for framing the argument. In January 1993 the script was presented to a meeting of the country's permanent secretaries. This presentation was repeated before various audiences on more than 60 occasions during the next three months, and this generated widespread awareness of the need for investment in nutrition.

The success of the presentations led to the development of intervention models and advocacy presentations for national programmes of salt iodization and young child nutrition. The presentation on salt iodization supported the launch of a new programme by the government and UNICEF, and emphasized the importance of enforcement, packaging and public education in order to hasten widespread coverage and a high degree of effectiveness. In 1993 a national survey revealed a goitre rate of 47%, representing an increase by a factor of 4.5 over 11 years, and this provided persuasive support for corrective action. Detailed plans for salt iodization, developed over several years by the Ministry of Health and UNICEF, provided the basis for estimating PROFILES values for costs, coverage and effectiveness.

The presentation on nutrition of young children describes the Bangladesh Integrated Nutrition Project, designed by the Ministry of Health and the World Bank in response to the health and nutrition problems facing the country's children. The presentation stresses economic benefits and design features of the project, and underlines the reality of deteriorating nutritional status in Bangladesh.

The presentations on salt iodization and young child malnutrition were given to many audiences. World Bank officials said that the PROFILES application played a vital part in gaining acceptance for the young child nutrition programme by the government and in obtaining approval in 1995 for an associated World Bank loan.

The Philippines

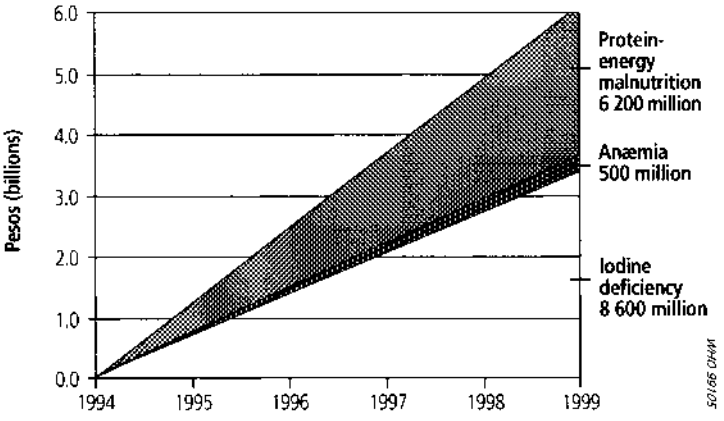
The PROFILES application in the Philippines helped to develop and advocate an early childhood development programme that included a large nutrition component in combination with health, family planning and education components. The Department of Health, the National Nutrition Council and the Asian Development Bank introduced PROFILES in 1994–1995 in order to integrate analysis, planning and advocacy from the outset.

Three script and slide show presentations lasting 7, 15 and 30 minutes were prepared. The shorter presentations contain less technical information than the longer one and are directed to higher-level decision-makers who can ask their staff to examine the technical documentation. The presentations lay stress on the increased productivity to be derived from the programme. The shortest presentation offers two important economic arguments:

- the present generation of Filipino children must be adequately nourished as from the time of conception so that the country's future workforce will be able to function at its full physical and intellectual potential and thereby compete with its newly industrialized neighbours;
- the nutrition programme should be seen as an investment opportunity that will pay for itself through increased economic productivity of the workforce.

Fig. 2, which is part of this presentation, summarizes the PROFILES calculations of the present value of lifetime productivity losses attributable to child stunting and maternal iodine deficiency, together with current productivity losses caused by iron-deficiency anaemia in the female workforce. Several consequence models were developed in greater depth for the Philippines application in order to back up the arguments. Non-economic arguments are also employed, appealing to the strong concerns of Filipinos for equity, social justice and child welfare. The model applications and presentations were designed cooperatively by the sponsors and the PROFILES staff.

Fig. 2. **Potential productivity gains from improved nutrition in the Philippines**



Taken from the PROFILES presentation ''Fuelling the economic dragon'', this graph shows the cumulative potential productivity increases estimated over five years by implementing an early childhood development programme in the Philippines. The calculations assume a 50% reduction in moderate and severe stunting, total elimination of iodine deficiency, and a 20% reduction in iron deficiency in pregnant women over a five-year period. An exchange rate of 28 Philippine pesos to US$ 1.00 was used.

As a result of the favourable experience in the Philippines, the Asian Development Bank and UNICEF incorporated PROFILES into a nutrition advocacy effort aimed at strengthening national nutrition investment plans in eight Asian countries. Country-specific spreadsheet models and a common user's guide were distributed by e-mail to technical persons in each country, who then performed their own analyses and incorporated the results into the respective national investment plans.

Ghana

In Ghana the focus has been on raising awareness about nutrition problems and their importance to the future of the country, rather than on obtaining political and financial support for particular projects. The application process was undertaken by the Ministry of Health's Nutrition Unit, the University of Ghana's Centre for Social Policy Studies, and UNICEF. It involved a core group of technical experts working intensively on policy analysis and communications tools under the guidance of a larger group of technical advisers, many of whom were at higher decision-making levels. Both groups included nutrition and health professionals from various ministries, universities and nongovernmental organizations. Two nutritional epidemiologists with experience of PROFILES facilitated a two-week workshop in September 1997, beginning with a two-day meeting of the core group and the advisers in order to set priorities and agree on a process. The core group did the detailed hands-on work with the models, wrote a script and prepared the computer presentation. The larger group provided guidance on overall strategy, priority objectives and target audiences.

The demographic and consequence models, programmed in commercial spreadsheet software, estimate costs and potential benefits of reaching targets for reduced malnutrition in 2001 as specified in the Ghana National Plan of Action for Nutrition or, where no target is specified there, as established by the combined core and advisory group. The models focus on mortality, lost productivity and the health and fertility benefits of breastfeeding.

Ghana recently announced an initiative whereby an effort would be made to become a middle-income country by 2020. The PROFILES presentation uses this theme, pointing out that children now being born will enter the workforce around that date. It argues that this aspiration depends on investment in nutrition now in order to ensure the survival, educability and productive capacity of children.

The advocacy event on the final day of the workshop was attended by about 40 decision-makers from a broad cross-section of government and donor agencies, many of whom committed their agencies to support specific activities. The core group has remained active, modifying and then using the presentation with different audiences. An immediate result, at least partly attributable to the PROFILES advocacy, is that the new child survival strategy developed by the Ministry of Health made improved child nutrition its top priority.

Discussion

PROFILES has been applied in some 14 developing countries. It has been used to increase awareness among decision-makers of the need for greater investment in nutrition, to facilitate the design and selection of programmes, and to promote particular interventions that were already being designed. In Bangladesh the government decided to proceed with a much needed $60 million community nutrition project financed by a World Bank loan. The success of PROFILES in the Philippines led to its incorporation into a joint initiative of UNICEF and the Asian Development Bank for the promotion of early child development activities in seven countries.

The application of PROFILES in a country involves the following steps:

- emergence of one or more organizations to champion the application;
- attainment of consensus on the purpose of the application and clarification of its context and limitations;
- model adaptation and development, including the obtaining and incorporation of data;
- development of presentations based on the model estimates around particular problems and programmes;
- delivery of presentations and engagement in associated dialogue with various audiences.

Three conditions must be fulfilled for a PROFILES application to succeed:

- the models and associated data must rest on sound research that is credible to the local scientific community and policy-makers;
- the magnitude of estimated improvements must be large enough to attract attention and justify the proposed investment;
- the advocacy process must be led by strong individuals and institutions that can generate and sustain it at the highest levels for at least two to three years with substantial involvement of the scientific and professional community.

The need for estimates that are both credible and large enough to justify investment reflects the tension between the political and technical aspects of advocacy. The political aspect is related to the interests of different stakeholders, their relationships with each other, and their relative positions of power in decision-making; the technical aspect is related to the provision of the knowledge and resources needed for recognizing and solving problems. PROFILES is designed to tackle only the technical issues. However, the larger advocacy process of which PROFILES is a part gives more attention to political matters. Sound analysis and strong technical arguments are ineffective if not presented in a way that makes sense to decision-makers and offers them clear alternatives with both political and technical benefits.

PROFILES may lead local planners to recognize weaknesses in programme plans more clearly and to obtain better information so as to make more accurate predictions of costs, coverage and effectiveness. In the most successful applications, the technical nutrition communities were involved in providing data, scrutinizing models and coefficients, formulating arguments, and designing computer presentations as part of a participatory consensus-building process. This ensured that the arguments were based on the best science and data available, and that a cadre of scientists committed to the advocacy process was available to defend the arguments. Participation thus strengthened both the technical and political aspects of the advocacy process.

The impact of improved nutrition on labour productivity has been an important factor in convincing policy-makers outside the health field; the prospect of improvements in intellectual capacity and school performance has also been persuasive. Reducing mortality among infants and children provides a solid argument but attracts less attention because this is expected by most audiences. ■

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Résumé

Action pour la nutrition et développement national : le programme PROFILES et ses applications

Le présent article décrit une approche factuelle de l'élaboration et du soutien de la politique nutritionnelle qui a été appliquée avec succès dans plusieurs pays en développement. Elle repose sur un ensemble de modèles informatiques estimant les conséquences des carences nutritionnelles et le rapport coût/efficacité des programmes de nutrition destinés à les soulager.

Les investissements dans les programmes de nutrition peuvent contribuer à la croissance économique et sont un moyen rentable d'améliorer la survie et le développement des enfants. Afin de communiquer ces faits aux décideurs, un programme de soutien à la nutrition et d'élaboration de la politique, comprenant un ensemble de modèles informatiques appelés PROFILES, a

été mis au point et appliqué dans plusieurs pays en développement.

PROFILES était au début un programme informatique autonome, qui calculait les conséquences des carences nutritionnelles dans les populations et en donnait une représentation graphique. Il a été mis au point pour former le cœur du processus de soutien et de développement de la politique de nutrition. Les versions ultérieures utilisent des logiciels commerciaux de tabulation pour le calcul des modèles et de présentation nécessaires à la communication graphique. La transparence de la dernière version a été améliorée en ce qui concerne le fonctionnement des modèles; elle permet plus facilement de modifier les modèles existants ou d'en ajouter de nouveaux et elle dispose, par rapport aux programmes originaux, d'un accès à une gamme bien plus vaste de situations que l'on trouve dans le monde en développement. On a utilisé PROFILES pour estimer les conséquences des carences nutritionnelles dans les populations, évaluer le rapport coût/efficacité des programmes de nutrition proposés et communiquer les résultats à divers publics.

Des plaidoyers efficaces s'imposent si l'on veut obtenir l'aide financière et politique nécessaire pour faire passer à la vitesse supérieure de petits projets pilotes et maintenir les programmes nationaux qui ont porté leurs fruits. Le programme PROFILES se sert des connaissances scientifiques pour donner des estimations sur les indicateurs importants du développement : mortalité, morbidité, fécondité, résultats scolaires, productivité du travail à partir de la taille, de l'état et des comportements nutritionnels des populations. Nombre des conséquences modélisées mettent en relation la prévalence de certains états ou comportements nutritionnels avec un ou plusieurs indicateurs de résultats en faisant appel à une approche par le risque attribuable à la population. Les coûts, la couverture et l'efficacité des programmes proposés servent à estimer les modifications de l'état et des comportements nutritionnels.

Au Bangladesh, l'application de PROFILES a permis d'obtenir l'autorisation et le financement d'un programme de nutrition important. Il a aidé à promouvoir la composante nutritionnelle dans un programme de développement s'adressant aux enfants en bas âge aux Philippines et à donner à la nutrition une grande priorité dans la nouvelle stratégie nationale du Ghana pour la survie des enfants. La réussite des applications passe à l'évidence par des projections crédibles du point de vue scientifique, par des améliorations que l'on estime suffisamment importantes pour attirer l'attention des décideurs politiques et concurrencer les autres demandes d'investissements ainsi que par l'aide de défenseurs locaux susceptibles de soutenir des activités de plaidoyer pendant au moins deux ou trois ans. Un grand nombre d'organismes ont appuyé l'application de PROFILES comme l'Agency for International Development des Etats-Unis d'Amérique (AID), l'UNICEF, la Banque mondiale, la Banque asiatique de Développement et l'Initiative sur les micronutriments.

Resumen

Promoción de la nutrición y desarrollo nacional: el programa PROFILES y su aplicación

En el presente artículo se describe un método de desarrollo y promoción de políticas nutricionales basado en datos, que se ha aplicado con éxito en varios países en desarrollo. El núcleo del método consiste en un conjunto de modelos informáticos que calculan las consecuencias de las carencias nutricionales y la eficacia en función de los costos de los programas nutricionales que permiten paliarlas.

La inversión en programas nutricionales puede contribuir al crecimiento económico y es una opción relativamente poco costosa para mejorar la supervivencia y el desarrollo infantiles. A fin de transmitir esa idea a las instancias decisorias, se elaboró y aplicó en diversos países en desarrollo un programa de promoción y desarrollo de políticas nutricionales basado en un conjunto de modelos informáticos denominado PROFILES.

Concebido en principio como un programa informático independiente que calculaba y mostraba gráficamente las consecuencias de las carencias nutricionales en las poblaciones, PROFILES se convertiría en el núcleo de un procedimiento de desarrollo y promoción de políticas nutricionales. Las versiones posteriores emplean hojas de cálculo comerciales para la modelización y programas comerciales de presentación gráfica. En comparación con la original, la versión más reciente hace más transparente el funcionamiento de los modelos, facilita la modificación y adición de éstos y amplía considerablemente el acceso a entornos del mundo en desarrollo. PROFILES se ha usado para calcular las consecuencias de las carencias nutricionales en las poblaciones, para calcular la eficacia en relación con el costo de los programas nutricionales propuestos y para exponer los resultados a diversas audiencias.

Se necesita una promoción eficaz si se quiere obtener el apoyo financiero y político requerido para superar la fase de los pequeños proyectos piloto y mantener con éxito los programas nacionales. A partir de los conocimientos científicos que incorpora, PROFILES calcula indicadores importantes del desarrollo, como la mortalidad, la morbilidad, la fecundidad, el rendimiento escolar y la productividad laboral, a partir del tamaño, el estado nutricional y los hábitos nutricionales de las poblaciones. Muchos de estos modelos consecuenciales relacionan la prevalencia de algunos estados o hábitos nutricionales con uno o varios indicadores de la evolución mediante la determinación de los riesgos atribuibles de la población. A partir de los costos, la cobertura y la eficacia de los programas propuestos, se estiman los cambios experimentados por el estado y los hábitos nutricionales.

En Bangladesh, la aplicación de PROFILES contribuyó a que se aprobara y financiara un importante programa nutricional. PROFILES ayudó a promover el

componente nutricional de un programa de desarrollo del niño en la primera infancia en Filipinas y a conceder alta prioridad a la nutrición en la nueva estrategia nacional de supervivencia infantil de Ghana. Es indudable que, para tener éxito, una aplicación ha de arrojar proyecciones científicamente verosímiles y estimaciones de mejoras lo suficientemente importantes para atraer la atención de los formuladores de políticas y competir con propuestas alternativas de inversión, y además ha de estar respaldada por personas que sepan promocionarla a nivel local durante al menos dos o tres años. Han apoyado la aplicación de PROFILES numerosos organismos, entre ellos USAID, el UNICEF, el Banco Mundial, el Banco Asiático de Desarrollo y la Iniciativa sobre Micronutrientes.

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