# PROJECTS TO PROGRAMMES: AN INTERNATIONAL PERSPECTIVE

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**Abstract**

*The decision to move from a successful project outcome to large-scale programme operations in the prevention of vitamin A deficiency involves detailed consideration of technical, managerial, and financial implications. The comparability of demographic, epidemiological, and service conditions at the project and programme levels must be considered in predicting long-term outcomes; the criteria for problem definition and response measurement must also be consistent. Design changes may be required as the scale is expanded; interventions managed by a single sector at the project level may require multiple-sector inputs at the programme level. Training, supervision, and management requirements are more diverse at the programme level, and operations research has an important role in ensuring consistent service performance under varied conditions. It is concluded that the development of effective software systems at the programme level is central to reproducing the technical effectiveness demonstrated at the project level.*

## Introduction

Three principal intervention options are available to control and prevent vitamin A deficiency (VITAD): administration of vitamin A supplements (usually mega-dose capsules), fortification of dietary staples at a central or local level, and dietary diversification supported by nutrition education and improvement of the quality of the food supply. With the possible exception of centralized fortification, the options depend in varying degrees on local delivery systems, usually in health, agriculture, education, and commerce.

Even in the case of fortification, however, the creation of demand through local systems can have an important role. This is particularly true when fortified and unfortified products compete in the marketplace, or when monopoly production encounters informal competition in the presence of a weak regulatory system. This review focuses particularly on the implications for local delivery systems in the transition from projects to programmes, assuming a distinction between the two kinds of operation based on the general characteristics listed in table 1.

**TABLE 1. Characteristics of projects and programmes compared**

| Project | Programme |
|---|---|
| Short-term (3-5 years) | Long-term (10 years-indefinite) |
| Small-scale (district/area) | Large-scale (national, regional) |
| High unit costs | Low unit costs; high percentage recurrent costs |
| Low total cost (extra-budget) | High total cost (compared with project) |
| VITAD intervention prioritized | Integrated service activity |
| Specific VITAD objectives | Composite health objectives |
| Flexibility and innovation | Replication of a defined model |
| Special monitoring and evaluation | Integrated reporting |
| External funding | National agency budget(s) |

## Framework for scaling up

Specialists in organizational behavior have defined several basic models for scaling up; two are generally pertinent to this topic. One is an organizational growth model, and the other involves large-scale programme expansion from small pilot projects.

Three phases characterize the organizational growth model. The first usually involves building credibility with clients, considerable experimentation, an informal structure, team efforts, and evolution of practices. The second involves consolidation: a definite work pattern and clearly defined roles among team members that emerge from experience. Third is large-scale expansion that brings with it increased managerial demands and a need for functional specialization.

Scaling up from small pilot projects, which seems to characterize VITAD interventions, involves decisions on what is to be scaled up—products, processes, or a combination of both; what key elements require special attention; what changes have to be made for effective expansion; and what resources physical, financial, and human—are required and how they will be made available. When this model runs into trouble, it is frequently due to a failure of strategic management and to mismatches between strategies and the programme environment or between strategies and the processes to implement them.

It is possible to look at either scaling-up model as arguably having four reasonably sequential stages that sometimes, and probably often, overlap: a process stage to test whether the proposed intervention will be effective under field conditions; a feasibility stage to determine the likelihood of achieving accepted output/outcome levels; an efficiency stage to establish optimum costs and effectiveness relationships; and, finally, a going-to-scale with the appropriate mix of services and resources.

In the process phase, an intervention that has proved efficacious in an experimental setting is tested under field conditions. Such field trials are often initiated by research institutions or groups seeking to demonstrate that experimental findings can be applied successfully in a service context. Their prime function, not unlike field trials in agriculture, is to see whether efficacy can be maintained under general service conditions applied to free-living (and free-

choosing) populations. There is an inherent need in design and implementation to minimize the confounding effects of weak delivery systems.

Ideally, an effort of this kind should be located in the worst problem area (to demonstrate impact best) with the best delivery system (to ensure that the technical effect can be isolated). These conditions are elusive in practice because health status usually is worst where services are poorest, and vice versa. Choosing the best service conditions to highlight technical effectiveness may therefore reduce the magnitude of the impact because baseline health status is relatively good. Conversely, if the worst health conditions are chosen to display maximum impact, the delivery system may require strengthening in a way that cannot be replicated at the programme level.

Regardless of the choice made, field trials tend almost inevitably to optimize delivery systems in the project area, if only in the contexts of better information collection, improved training and management, and stronger motivation to obtain a positive result. They will also frequently add substantial resources to upgrade infrastructure and for staffing, training, supervision, supplies, and logistics, all of which are affordable in the context of a relatively small-scale, short-duration project but may be very costly at the programme level.

The main purpose of the second, or feasibility, phase is to identify the operational difficulties and resource constraints likely to be encountered under programme conditions. Feasibility efforts are usually initiated by the agency or agencies that will carry programme responsibility in the longer term. In the case of VITAD control this usually is the department of health, with collaboration from other departments such as agriculture, education, or rural development, singly or combined depending on the strategy. At this stage there is clear recognition of geographic variation in problem severity and in health-service performance at the field level. This raises a different dilemma: choosing a project site that best represents programme conditions and resource requirements as a basis for future planning. Above-average service conditions may conceal a future need for

substantial resources to upgrade areas with poor services, and worst-case conditions may exaggerate the inputs required to deliver an effective intervention and so threaten the diversion of scarce resources from other priority activities.

Effectiveness and feasibility are not always defined as separate objectives, however. Sometimes the design at these stages reflects an optimistic mix of objectives; that is, it is hoped that the same model will demonstrate or validate effectiveness and at the same time provide useful information about programme requirements. The danger is that such a mixed approach may fail to provide the full range and quality of necessary information, particularly regarding programme requirements.

The progression from project-scale activities to full programme operations is therefore viewed differently according to the commitments and expectations of the different participants. Directors of successful effectiveness trials are rewarded by academic and professional recognition and want to know, where do we go from here? Managers, on the other hand, will inherit the strengths and weaknesses indicated by project performance and will be responsible for programme implementation and resource allocation; they want to know, what am I buying, how well will it work on a large scale, and can I afford it?

The efficiency stage is where the question of cost-effective workability on a large scale comes into play. It is at this point that operations research is usually required to provide the best relationships among inputs, outputs, and outcomes. Testing different delivery channels and processes becomes virtually essential to ensure the emergence of a good match between the VITAD strategy and its programme context and content.

**Programme design and development**

An important consideration in the transition from projects to programmes is understanding the nature and extent of the problem. The initial definition of vitamin A deficiency at a national or regional level may be based on relatively weak estimates of magnitude, derived from service records or unrepresentative surveys using variable criteria and procedures. In the selected project area, where precise objectives are set and rigorous evaluation carried out, more exacting procedures and criteria may be applied, with a resulting loss of comparability between project and programme conditions. To maintain the validity of assumptions underlying expected programme effectiveness, systematic corrections to epidemiological rates for the area may be required or, alternatively, the population may have to be reassessed using the project criteria.

This situation is further complicated if new and more sensitive biological indicators have been introduced at the project stage to improve the assessment of response. If biochemical or functional (dark adaptation) assessment of vitamin A deficiency has been used in the project to improve the sensitivity of response measurement, the question arises as to whether this should be used at the programme level to redefine the magnitude of the problem in public health terms. Such redefinition may greatly increase the size of the population perceived to be at risk and lead to a loss of precision in targeting interventions.

In addition, the scope of VITAD-prevention programmes is changing over time. New and increasingly reliable research information has emerged in the past few years on the role of vitamin A supplementation in controlling mortality from common infections in childhood. The Canadian International Development Association funded a recently completed meta-analysis of all major mortality intervention studies which concluded that an average reduction of about 23% in mortality among children under five years of age may be expected as a result of supplementation with vitamin A concentrates in populations with some frequency of overt eye disease. This means that programme objectives and expectations may now be more extensive than those of precursor projects. Mortality indicators have not always been used in the first generation of pilot projects; setting realistic

objectives for reduction in large-scale follow-up programmes may present difficulties.

Similar attention is necessary with respect to strategy definition and the selection of programme interventions. Earlier efforts to control eye disease were based principally on capsule distribution and were located mainly if not exclusively in the health sector. Although longer-term dietary change was sometimes incorporated in the design, it was usually a secondary component, and its implementation was less closely monitored or critically evaluated. Current international policy places more emphasis on dietary diversity as an avenue for the long-term prevention of vitamin A deficiency. Accordingly, a higher priority may be accorded to dietary measures in the programme plan than in the pilot project, which will have implications for the estimates of future programme effectiveness based on project performance.

Whereas we have good evidence for the effectiveness of some interventions, such as capsule distribution, the evidence for others is less complete. By extension, the effectiveness of different strategies based on various combinations of interventions is even less clear, and the law of diminishing returns may apply. The addition of further components to a single-intervention strategy may be expected to produce further improvement in overall effectiveness, but the question remains as to whether the incremental gain can be justified in terms of the additional cost.

The effect of changes in intervention strategy between project and programme phases applies also to inter-sectoral cooperation. If dietary change as a preventive measure is made a priority, adequate supplies of foods rich in vitamin A (and, 8-carotene) at the household level must be developed, requiring improved production, processing, and distribution systems as well as increased beneficiary demand. Whereas supplementation is delivered almost exclusively through primary health care systems, dietary intervention requires effective cooperation among agriculture and food-processing and distribution interests and

their acceptance of health and nutrition status as an internal priority. In view of the critical role of agricultural production in export-led economic growth and the associated priority assigned to the production of (often non-food) cash crops, this may not be easy to achieve widely over the short run.

Centralized fortification of dietary staples with vitamin A is also likely to involve the active cooperation of the private and public food industries. Community-level fortification may be technically and managerially feasible but probably still requires negotiation with local food suppliers.

Within the health sector, programme managers also have to decide whether the new VITAD intervention is to be given priority over competing activities that use the same delivery system. Capsule distribution and associated tasks such as inventory maintenance require additional time and effort from care providers. So do nutrition education for dietary diversification, and communication and coordination with staff of other agencies involved in the production, storage, and distribution of food supplies.

Most health interventions at the primary level are delivered through the community health worker, whose job description almost universally is heavily overloaded. The addition of even relatively simple tasks such as the above must involve formal and informal trade-offs with other work unless personnel resources can be increased. Where human resources are severely limited, care must be taken to ensure that the introduction of measures to control vitamin A deficiency does not adversely affect the performance of other essential functions and, by extension, of the supplementation process itself. The true extent of the incremental effort required is often greatly underestimated in making decisions about up-scaling simple interventions to the programme level.

**Training, supervision, and management**

In moving from smaller projects to large-scale programmes, the key issues shift from technical effectiveness and feasibility to the tougher question of operational

impact and costs. It is increasingly clear that the principal determinant of programme impact, cost-effectiveness, and efficiency is what happens at the intersection of the three most crucial aspects of delivery systems: training, supervision, and management.

These three aspects are critical because populations targeted for vitamin A and other nutrition programmes tend to be highly differentiated by a number of factors, frequently including socio-cultural characteristics. Reaching such people effectively requires flexible training, supervision, and management systems so that services and communications activities can be varied locally in the light of local conditions, priorities, beliefs, and behaviours. One way to promote a better fit between strategy and services (and to generate local commitment) is for communities themselves to take the lead in recognizing their vitamin A problems and deciding what to do about them.

Unfortunately, under most delivery models, service providers usually have relatively few built-in performance incentives. In a situation characterized by low technology and knowledge and high uncertainty about outcomes, the tasks of service providers often are not clearly defined or are intrinsically hard to measure and therefore not easily monitored. Furthermore, a lack of demand from the clients and their generally marginalized status act as disincentives to workers' concentration on services to them. Clearly, management approaches have to take account both of the services to be delivered and of their organizational and cultural contexts.

Whatever is done in these key areas has to derive from decisions on what services are to be delivered to the clients, by whom, how often, and with what expected results. The cutting edge of that delivery process is work routines resulting from an iterative process of hypothesis, testing, and refinement. A basic consideration is to define task priorities and their time implications. Those priorities should be consistent with the nature and magnitude of the problem, and

must also reflect a level of technology that the workers can deliver at a reasonable cost and with a reasonably assured outcome.

Several decisive elements are involved in going to scale. Training at all levels must emphasize problem-solving, field practice, learning by observation, and imparting better knowledge, attitudes, and skills. Pre-service training should emphasize practices: what to do, how to do it, why it is important. Workers should leave pre-service training confident of their ability to deliver services and of why these particular services are more important than others. Nextin-line supervisors have to be trained to supervise, not just to administer. In-service training has an important complementary role in solving problems, incrementally increasing skills, and orienting staff to seasonal or other changes in programme emphasis.

There are probably more than a few cases where, as in India, nutrition and complementary health services are delivered by different workers reporting to different departments. Where, as is most likely, nutrition services and staff are added to an already functioning health system, difficulties may be encountered at least initially in getting the different worker streams to interact satisfactorily. Joint training may help to establish an initial climate for collaboration and procedures, but much more durable impact comes from management signals through supervisors and other aspects of the bureaucracy.

Supervision, particularly at the periphery, ought to be seen as essentially providing on-the-job training and solving problems rather than as an inspection function. Therefore, it must be sensitive, consistent, flexible, and frequent. Both quantity and quality have to be considered. Tasks that vary in intensity and sequencing require more frequent supervision. The question of whether the performance benefits of more, rather than less, supervision justify the additional costs is seldom explored sufficiently.

It is possible to analyze supervision functionally, determine how much time is required for each task, and then work out the marginal costs and output of varied supervision regimes as long as the output measures are clearly defined in evaluable terms. Some programmes have determined ways for community representatives or committees to supervise or monitor the service-delivery staff. Advantages are a presumably better linkage between demand and supply in terms of both quantity and quality, and a stronger sense of community ownership of the services. A prospective disadvantage of so-called community control is the possibility of manipulation by the local elite, which can be countered when recognized if the commitment to community empowerment is real.

Supervision becomes complicated when two administratively independent worker streams deliver complementary services, particularly if the workers are at different technological levels. This will apply specifically where dietary diversification is a principal component of the VITAD-prevention strategy. Service inputs from agricultural extensionists, home economists, schoolteachers, and health workers have to be coordinated systematically at the local level to make this intervention work effectively. Some mechanism is necessary to send the right signals to front-line workers and for supervisors to meet and sort out issues at the field level. This is a tough problem that few major programmes have resolved successfully. Nevertheless, despite constraints, several have demonstrated high levels of worker and supervisor commitment, maybe partly because the design of the project fostered self-evaluation and worker self-respect.

Supervision at the district or comparable levels of intermediate management also requires attention. This is the highest tier at which rapid operational feedback to the field staff is possible. It is the point at which performance data converge for consolidation, analysis, and transmittal to the project management. It is also the level from which operations research questions are posed for higher-level consideration. An essential tool of intermediate field management is a good monitoring system to provide early warning of performance problems in particular geographical or functional areas. This is essentially a level for planning,

programming, budgeting, and administrative decisions based on interaction with the top project management on strategic questions and feedback from below on operational matters.

## Special programme requirements

### *Data collection and analysis*

Although the quantity, quality, and timeliness of data collection and analysis are usually enhanced at the project level, particularly where effectiveness is being tested, it is not always necessary to establish special systems and units for this purpose. Furthermore, external sponsoring agencies often become involved directly in this process to meet their own wider information needs. Under these conditions, the real costs of monitoring and evaluation can be underestimated, as data are essentially managed outside the project. When a follow-up programme is initiated, it is usually essential to establish a special monitoring and evaluation unit for the first few years to keep track of performance in larger populations and under more variable conditions, thereby adding an additional but worthwhile element of programme costs.

### *Financing and resources*

Responsibility for financing and resource allocation may change in the transition from projects to programmes. As mentioned above, small-scale effectiveness projects are often initiated by agencies or groups with external or additional funding, whereas the larger and longer-term commitment of programme resources is usually the exclusive responsibility of health and other national services. In making decisions about scaling up, it is therefore essential to determine the capacity of national agencies to sustain particularly recurrent costs over the long term. When incremental costs as well as benefits are likely to be substantial, some form of continuing external assistance may be warranted, perhaps on a declining scale, until the programme stabilizes.

## Conclusion

Vitamin A deficiency resulting in eye disease remains a serious public health problem in many poor countries. The evidence that it also can affect mortality and severe morbidity in infancy and early childhood further strengthens the case for comprehensive and effective prevention. An array of technically effective intervention measures are already available, with the potential for global control of the appalling effects of the disorder. However, decisions to apply those technologies on a large scale are often made without adequate attention to the programme context. Strategic planning may ignore the potential of operations research to reveal the cost-effectiveness and efficiency implications of programme choices and how to optimize them. In some cases, suitable mechanisms for translating small-scale projects into large-scale programmes are simply not yet in place; the health sector is not alone in its experience with successful pilot projects that never reached operational maturity.

What is needed is a better marriage between available control technologies and the essential systems for delivering them efficiently and on a meaningful scale. Where the delivery systems are weak, strengthening them is critical to successful large-scale interventions. Only by focusing as much attention on the application of the technology as on the technology itself can we be sure that VITAD interventions will be translated into effective and sustainable large-scale action.