A HANDS-ON GUIDE

TO HEALTH AND NUTRITION PROGRAM DEVELOPMENT AND SUSTAINABILITY:

Building health and nutrition promotion programs for improving lifestyle habits of children and adolescents

DANONE INSTITUTE
Nutrition for Health

HANDS-ON GUIDE TO HEALTH AND NUTRITION PROGRAM DEVELOPMENT AND SUSTAINABILITY

BASED ON THE RESULTS AND EXPERIENCE OF A STUDY CONDUCTED BY THE DANONE INSTITUTE INTERNATIONAL: DINE – DANONE INSTITUTES DEVELOPPING NUTRITION EDUCATION PROGRAMS

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PREFACE

Nutrition related diseases and disorders are the main cause of death and morbidity in the great majority of countries in the world. These diseases have their onset early in life. During childhood, the most prevalent nutritional disorder is obesity. Excess of body fat and nutritional issues are often accompanied by a plethora of complications. The most frequent ones are psychosocial, but those having the highest long-term impact are those related with the cardiovascular and endocrine systems. Energy balance-related behaviours are the main modifiable risk factors for the development of nutrition-related diseases during childhood. In addition, an environment promoting an excess of energy intake and low levels of physical activity should also be considered.

Early prevention of nutrition-related diseases is crucial which is why it is important to encourage healthy food and lifestyle habits from a very young age. Treatment programs should be implemented to improve health status of children and adolescents with these health issues. However, from a Public Health perspective, prevention is the optimal approach. Nutrition promotion programs aiming to improve lifestyle habits of children and adolescents should be developed. They should be based in the best available scientific evidence. Independently of research studies, best practice programs should be implemented in different settings. With these concepts in mind, the Danone Institute International has produced this White Book that should guide future nutrition education programs to be developed by the different Danone Instituts in different countries.

This book has been funded and directed by the Danone Institute International. It is to be mentioned the outstanding contributions and efficient coordination of the contributions of the Review Committee and the Scientific Review Committee. The different chapters should guide those responsible of program development. The book is organized in a way that allows readers to go through different steps, including some aspects missing in other similar books, like those related with budget estimation, pilot/feasibility study or evaluation of the program. The book will also support reporting of program's results.

There is no doubt this book will contribute to improving the quality of the programs that should be developed by the Danone Institutes all over the world, but also from other similar institutions. The book ends with some existing and available experiences that are the basis to anticipate a great success to the future activities.

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EDITORIAL

HUMAN NUTRITION AND FOOD EDUCATION HAVE A STORY...

Life needs energy. The management of energy is the main key for sustained life. From the cellular mitochondrial control of ATP metabolism to the behavioural control of food intake, Humans developed a set of complex systems to maintain and expand their Species all over a specific biotope: The Earth. Evolution requires adaptation, and sustainability favours stability: How flexible are human pathways? Where might adaptation tune them? What are human innate functions and what can humans acquire? To which level is the basic fundamental need for energy sensitive to cognitive development? Is education a tool efficient enough to improve human adaptation to modern dietary challenges?

FIRST CHALLENGE FOR HUMANS: SELECTING PROPER FOODS

The oldest challenge for Humans has been, and still is, to select an adequate dietary intake. Humans rely on foods to get energy: they don't have the chlorophyll able to transform solar photon into metabolic energy stored into ATP. They must extract Energy from ingested foods. The first challenge was to select edible foods among what Nature is producing. Very few foods have been designed for consumption: Milk is one of them. It is made to feed the growth of mammals. Fruits are another category: they need a consumer to take them, to eat the sweet flesh and spread the kernel a little further away from the tree they are growing on.

Most foods developed ingenious defence systems (or only those that had an efficient defence system survived) to fight against predators: either toxins for plants, or various strategies for animals. Hunters learned to deal with animals, farmers had to learn how to overcome plants' tricks. I learned from my grand-father how to store potatoes in darkness, and from my grand-mother to peel and cook them. A long time later I learned about solanine, a heat-sensitive toxin made by the skin of potatoes under the sunlight. Tradition has taught how to eat potatoes, avoiding an excess production of toxins during harvesting, and cooking potatoes to destroy the toxin. 1 kg of raw potatoes can kill a naïve man, but obviously not a wild boar.

HUMANS STAY LOYAL TO WHAT THEIR PREDECESSORS HAVE LEARNED

That long vital learning was life-threatening, and a significant number of explorers died when testing new items, and/or new technologies before Humans found a sustainable ecological balance to survive on Earth. Therefore survivors were carefully educating their kids and the simple

education rule was: eat what your (surviving) parents eat, and mimic agricultural and cooking procedures!

Our old reptilian brain remembers that rule. It explains neophobia: we are afraid of eating "new" foods because we can't, or we don't want to take the risk to assess whether a new food is edible or not, or poisonous or not. It is too dangerous. We only know that bitterness is often a signal of toxicity. Therefore we rely on peers to eat first a new food. That basic principle applies when eating abroad: we mimic what local people are doing and eating, before reading in a dictionary about what we have been eating.

SECOND CHALLENGE TO HUMANS: LEARNING TO PREPARE AND STORE FOODS

The second challenge was to learn how to prepare and store foods. Preservation used two major techniques: fermentation, acidic or alcoholic, and reduction of free water. Apart from drying in a gentle breeze under the sun or within the smoke of a fire, elimination of free water requires either salt, or sugar or fat. Recipes were a second major part of education, and a basic legal rule in food processing is to use "fair and consistent processes". Experience is the master. Those technics might have been also a selecting pressure: It is tempting to speculate that only those humans who were able to cope with the necessary concentrations of salt, sugar, fat, acid and alcohol (for beverages) in foods survived during food shortage periods like winter time. We can also speculate that parents educate their kids to appreciate foods with the right amount of those ingredients.

For ages we have been educated to love salt, sugar, fat, acid and alcohol (for beverages). We learned to like those concentrations: they were the signal of a safe food, and the possibility to survive. Nowadays an excessively high consumption levels of salt, sugar or fats, (and alcohol obviously), are identified as dietary risk factors for a part of the population. We may wonder why those nutrients are becoming a nutritional threat when they have been a safety trick for centuries. One explanation is that our modern life expectancy is longer than before, allowing metabolic disorders to develop and challenge health of elderly consumers that did not exist a century ago.

A breakthrough revolution occurred in 1810 when Nicolas Appert published in Paris his work on the art of preserving animal and vegetable substances. He reported more than 15 years of experiment of putting foods in glass jars and boiling them in water. The same year a British inventor, Peter Durand, patented the use of tin can instead of glass jars, and started a long history of canned food. The final touch came in with the invention of a can opener in the US by William Lyman using a rolling cutting wheel. Preservation can be industrialized with less constraint on salt, fats and sugars. However for ages we have learned to like salt, sugar, fat, acid and alcohol. Are 200 years enough to educate our taste and habits for new dietary practices?

THIRD CHALLENGE TO HUMANS: BALANCE IN FOOD SELECTION

The third challenge appeared when industrialization of food production and food processing provided enough food for a large part of the population, even more food than needed: The challenge was no longer to find edible food, but to select an adequate balance of food to constitute a diet beneficial for Health as foods provide nutrients beyond energy. This challenge started some millennia ago when Hippocrates was teaching "Let food be your first medicine". He was recommending the consumption of liver to prevent blindness induced by a lack of vitamin A, sponge to provide iodine to fight against goiter and so on. He was implementing mythology in the real world. Mythology tells us that Diet was one of the four elements given by the Gods to Humans. Aesculapius in Greek mythology had

four children: two sons: Machaon (surgeon) and Podalirios (physician), and two daughters: Hygia and Panacea. Hygia used cleaning and washing to take care of Health, when Panacea was in charge of identifying beneficial herbs, plants and ingredients among all products Nature was offering. It is amazing that the two managers of foods risks (Hygiene) and benefits (Panacea) were already women. This tradition was incorporated into practices and recipes. In many cultures food recipes included some medicinal prescription. There is a specific chapter, in one of the oldest French books "Le Viandier" from Taillevent, devoted to the preparation of foods adapted to disease management. Education was already implemented and disseminated within a targeted audience: those in charge of preparing foods.

NUTRITION, GENDER ROLES AND THE TRANSFER OF KNOWLEDGE

It was so important to manage the diet properly, and to provide adequate nutrition for all, that one specific person in each family was in charge of it: the house wife. The common basis for nutritional education of the family was " empty your plate ", and the house wife was in charge of scheduling the menus around the week and the year, preparing meals, serving them in adequate amounts. The transmission of that knowledge was a long, slow process our modern books can hardly compensate despite their proliferation. Interestingly, one of the bones of contention within a family is on one hand the difference in cooking principles between a mother in law and her stepdaughter, and on the other hand the challenge of the never satisfied husband dreaming of " grand-ma apple pie ", that was the best he ever tasted. Each one is willing to promote her/his past education. Marketing uses that culture by referring either to Grandma, or an old Aunt or by referring to an old Bostonian School or a Chef. Education is based on personal references and targeting specific audience.

THREE NUTRITIONAL REVOLUTIONS IN RECENT DECADES

Humans are experiencing three revolutions in the last decades: Longevity, independence, and abundance.

LONGEVITY: For the first time in history, humans are living beyond 35-45 years of age: life expectancy for men is around 78 years and 85 for women. Humans have no experience of very long-term health effects of dietary intakes. Diets have been selected to fuel humans until 45: they had to grow, fight, procreate, educate, and die at around 40 years of age. The present revolution: humans are experiencing long term consequences of early dietary practices. They have also to learn how to feed properly physiological devolution.

INDEPENDENCE: Humans are no longer eating all their meals at the same place, nor under the supervision of the same person. They are becoming autonomous eaters. They are becoming responsible for their own dietary selection and nutritional balance. They can't rely on someone else to know about diet and nutrition. This new knowledge is a must, a daily need, and a long term individual as well as societal responsibility. Education should be provided for everyone, and not only children.

ABUNDANCE: At the same time foods, for a large part of the population, are accessible everywhere at any time, a tasty reward or an easy pleasure in growing serving sizes, and motorization reduced human energy needs drastically: Foods can be delivered in your car or even in your home without significant energy expenditure. Similarly, the production of foods requires far less energy than 50 years ago. Strikingly food wastes are mirroring that abundance!

WHAT DO WE KNOW ABOUT MODERN NUTRITION?

Each of us has to learn what to eat, how much, how often, when, and to decide to take care or not of future consequences. And we all have to learn how to feed humans in order to add life to years, and to cope with devolution. Humans can't drive a car without a drivers' license, because it is too dangerous. Should we implement an eating license? What should we know about modern nutrition?

MODERN NUTRITION: started in 1950, far from completeness. Modern nutrition started after the Second World War: Energy and protein intake was identified as the main cause in two forms of malnutrition: marasmus and kwashiorkor, in the developing world. Adequate protein intake was able to restore an efficient immune system, and adequate water and minerals intake were implemented to manage acute diarrhoea. This is still a modern challenge in our developed world: a large part of European elderlies are suffering from insufficient intake of energy, proteins, water, minerals and vitamins: between 30 to 75 % according to a European survey. In the last decade another form of malnutrition rose everywhere in the world: Overweight and Obesity.

TODAY'S DIETARY SCIENCE

Modern age of dietary science can be schematically split in two phases:

PHASE ONE: DIET-RELATED DISEASES

Nutritionists explored the deleterious effect of excessive intake of nutrients. Therefore nutritional prescriptions were about reducing dietary risk factors. The increase in life expectancy was associated with an increase of new causes of death, namely cardiovascular diseases and when a US senator died of an excess of blood cholesterol, scientists explored the possible links between dietary cholesterol and risk of cardio vascular disease. Ancel Keys published his classical correlation between the intake of fats in seven countries and the rate of cardio vascular mortality. However 40 years later, changes in consumption of fats and saturated fats are not correlated with changes in cardio-vascular mortality, and the final conclusion is still a matter of debate, even if everyone agrees on the common sense conclusion that excess of (saturated or not) fat intake is not recommended.

For many decades, physicians learned what to get rid of from the diet of their patients, according the amount of sodium to blood pressure, protein to creatinine clearance, sugars to glycosylated hemoglobin, the ratio of fat to carbohydrates to the respiratory capacities, the amount of alcohol to gamma glutamyl transferase, and so on.

PHASE TWO: DIETARY GUIDELINES

After this "banning phase" came a second phase: a "positive" recommending phase where dietary prescriptions were about positive actions. For example French official guidelines are made of half "reduction" advices, and half positive messages.

- Avoid overeating Fat, Sugars, Salt (évitez de manger trop gras, trop sucré, trop salé)
- Avoid nibbling between meals (évitez de grignoter entre les repas)

Two "positive" messages:

- Eat daily at least 5 servings of fruit and vegetables (mangez au moins 5 fruits et légumes par jour)
- Practice physical activity regularly (pratiquez une activité physique régulière)

Two factors contributed to emphasize the positive approach: Dieticians realized that it was necessary and more important to tell patients what to eat than what to avoid. And a majority of consumers are more interested in a healthy lifestyle and are more willing to get benefit from an improved diet (e.g. a better body shape for summer time) than to associate food with diseases, even diseases' prevention.

WHAT ABOUT EDUCATION?

A huge amount of information has been disseminated during the last decades, using all kinds of presentations, arguments, rewards, punishments, incentives with a very limited impact: failure is the most common result.

Is education a tool efficient enough to improve human adaptation to modern dietary challenges? Or when and which education can improve dietary practices? Are there some common basic principles that can be shared? What are the best windows for action? What are the most sensitive targets?

CHANGING DIET FOR A BETTER HEALTH IS A CHALLENGE FOR EDUCATION

The World Health Organisation put Nutrition for Health and Development as a priority on its agenda and proposed a global strategy with action plan for different partners, including the food Industry. Knowledge in Nutrition and Dietary practices is a corner stone for each stakeholder:

- The food industry to constantly adapt food composition to the changing needs of evolving consumers;
- Scientists to the improve physiological assessment of dietary changes on nutritional needs and short and long term health consequences, to cluster consumers groups, to validate markers for clinical studies;
- Health care professionals to include dietary management in their practices;
- Government to implement rules for fair and non-misleading communication and claims, and to include nutrition in their health policy;
- Consumers to select their foods and diet according to their needs, their wishes, their cultures and wallet;
- Educators to teach the evolving knowledge in a format adapted to the different targets.

DANONE'S LONG HISTORY OF NUTRITION AND HEALTH AND THE CREATION OF THE DANONE INSTITUTES

Danone included health and nutrition in its strategy since the beginning of its business: as early as 1789 for Evian spring water, or 1896 when Nutricia founder develops an early version of a baby milk, or 1919 when yogurts made with strains coming from Paris Pasteur Institut were sold in Pharmacy for Spanish children suffering diarrhea.
Its vision is " to provide health through foods to as many people as possible ".

Danone's commitment to nutrition, health and well-being was the reason for creating a first Danone Institute in 1991, a non-for profit organization, with an independent academic board. 20 other Danone Institutes have been created in different countries. Their common mission is to develop knowledge on the links between nutrition, diet and health, and to disseminate that knowledge to the general public. Therefore, the Danone Institutes:

- bring together scientists expert in dietary and nutritional studies, with health and education professionals;
- promote research in nutrition;
- serve as a clearinghouse for information on diet-related topics.

To carry out their mission, the Danone institute set up concrete programs of action, taking a multidisciplinary approach that combine, medicine, biology, nutrition and human sciences. During their 20 years of existence, the Danone Institutes have developed numerous programs aiming at informing and training professionals and educating the general public.

THE DINE PROJECT

Education is so important, that it was decided to review what different experiences have been implemented in different countries, and to assess their strength and limitation, their opportunities and threats, if any.

Among the questions we selected:

- Who is getting the main benefit of different mode of education?
- Should nutrition education come in addition to existing teaching program or does it deserve specific mode of education (e.g. Edutainment, practicing, out of school programs…)
- Are there some common core key success factors that can be rolled out in some or even all countries, or are there some major cultural differences that prevent to generalize an national efficient educative program.
- How and when should the success of a program be evaluated?

Collecting existing information, clustering it and analysing commonalities and differences was a huge task. We were fortunate to have a dedicated young scientist willing to improve education in diet and nutrition that has done this.

One of the key success factors of the Danone Institute is to be at the forefront of Science and Education. We can only learn from experiences, and there are no wrong experiences as long as we learn from our limits and success. Exploring is inherent about learning in food and nutrition, as well as for education.

I am confident you will enjoy the reading and learn a lot about Diet, Nutrition and Education.

Danone Institute International

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The objective of this book is to build upon the experience of the Danone Institutes to provide a concise, practical tool for developing, implementing and evaluating nutrition and health programs for children ages two to 18. It is the result of the DINE (Danone Institutes Developing Nutrition Education) study which looked at nutrition and health programs worldwide. The aim is to guide project leaders through a sequence of coherent steps toward effective, pertinent and culturally relevant programs.

Nutrition and health programs can be defined as organised actions developed by a credible structure, which aim at improving the health and lifestyle habits of a specific target group. These actions should inform or educate individuals as well as create social and physical environments that are conducive to healthy habits, as per the socio-ecological approach (§ Introduction).

The DINE study results informed the content of this document and have been the foundation to the development of its methodology. Emphasized throughout this document is the active involvement of scientists and health professionals as well as the design and conduct of valid evaluations of nutrition and health programs. We consider them to be essential to the development of sustainable, effective nutrition and health programs.

This document is divided into two parts. The first is designed to give the reader access to the key results of the DINE study, highlighting issues to be considered during the development of nutrition and health programs. The second part is a more practical step-by-step guide for designing, implementing, and evaluating nutrition and health programs.

PART ONE: DINE

The Danone Institutes International have been developing nutrition and health programs for children for over 20 years. Beginning in France in 1991, the Danone Institute network has grown internationally, allowing the implementation of several programs in over ten different countries. The Danone Institute International is also investigating innovative intercultural program strategies.

The DINE project studied the recent DI programs, paying special attention to the way they were developed. The results revealed interesting information as to the optimal conditions for the development of such programs.

Gathering diverse working group members is crucial for the successful development of programs. Including scientists in early reflections was especially important. In addition, assuring close proximity with program participants and administrators was appreciated by them and lead to more accurate implementation of the program.

Danone Institute programs which target several different population groups (i.e. parents, children, teachers) conveyed messages and encourage participation more effectively. The involvement of institutional (public/private) partners also added to the diversity of the working groups and increased the potential for program development.

Programs with defined objectives were more likely to work toward the design of corresponding actions and corresponding evaluation plans. Evaluated program pilot phases allowed program working groups to improve the program implementation and material for a successful first implementation phase.

Conversely, very few of the programs studied had been evaluated and rare were the programs that included a follow-up process with participants or administrators. This limited evaluation and absence of follow-up made it hard for program initiators to understand the final outcomes or effectiveness of the program and its credibility.

Program administrators expressed the need for more information as to the health stakes and the ways in which they could play a role in an instrumental way. Unfortunately, several programs had very limited personal contact with program administrators.

The mission of the Danone Institutes, which is to promote public health by developing and disseminating knowledge on the links between nutrition, diet and health, gives them a legitimate role to play worldwide. The DI network values sharing between countries and the development of joint programs and diverse partnerships.

PART TWO:
STEPS TOWARD THE DESIGN, IMPLEMENTATION AND EVALUATION OF SUSTAINABLE HEALTH AND NUTRITION PROGRAMS FOR CHILDREN

Part two of this document gives practical recommendations on how to design, implement, and evaluate nutrition and health programs. The steps outlined in this section are based on the results of the DINE study. This part of the executive summary outlines the six steps involved in the entire process:

- Defining a Global Problem and Researching its Specific Context
- Defining the Primary Program Objective and Program Focus Points
- Conceptual Framework and Intervention Evaluation Plan
- Organising a Pilot Phase
- Phase One Implementation
- Follow-up Reports and Program Closure

STEP 1: DEFINING A GLOBAL PROBLEM AND RESEARCHING ITS SPECIFIC CONTEXT

Before designing the program, it is important that the initiating group decide on a global public health problem to be addressed. The project coordinator should then invite a variety of scientists and professionals to participate in a working group. The problem should be further explored and defined through an expert report produced by the scientific members of the working group and pre-program study results. A creative brief with these details and some mind mapped ideas of what the program could look like should be used to encourage the participation of institutional partners or additional working group members. Step 1 should include several mind mapped working group discussions and certain aspects of the program should be clear such as the nature of the global problem and the action plan, target groups, and the action plan of the program.

STEP 2: DEFINING THE PRIMARY PROGRAM OBJECTIVE AND PROGRAM FOCUS POINTS

A program logic model should be used to design a program that will work effectively to achieve its objectives. This guide uses the Swiss Model for Outcome Classification (SMOC) which is also useful for defining the program focus points, objectives and actions. In Step 2, program focus points are chosen according to specific needs of the population, the feasibility for impact, the resources of the program and the working group, identified levers for change, and the ambition(s) of the program and initiating group. These focus points and the SMOC are used to define the program's primary objective, scale and the evaluation coordinator organises an initial diagnosis of the specific situation (including primary objective, specific targets, size and scale).

STEP 3: CONCEPTUAL FRAMEWORK AND INTERVENTION EVALUATION PLAN

Step 3 is divided into two different tasks which should be accomplished simultaneously. The conceptual framework and evaluation plan should be designed together. This is one of the most crucial parts of the program development and may take several months of work. Designing the conceptual framework of the nutrition and health program will allow the project to take form in a concrete way. The working groups define intermediary objectives, the levers used to achieve them and the indicators used for measurement. The development of the program implementation plan will allow the working group to move from concepts to action.

Designing and constructing the program evaluation plan should come very early in the program development process. Step 3 leads working groups through the definition of evaluation objectives, strategies and methods. The elements chosen for evaluation and the corresponding indicators should be directly linked with the elements of the conceptual framework. Working groups prepare an evaluation implementation plan and a program improvement plan as a result of the evaluation.

STEP 4: ORGANIZING A PILOT PHASE AND PROGRAM IMPLEMENTATION

This step is dedicated to the implementation of the program on a very small scale before the first real phase of the program implementation. Program materials, tactics and strategy can be tested to allow for any final adaptations or improvements to be made before implementing the first phase of the program. The pilot phase should be used for the evaluation of some or all of the following aspects of the program: impact (if time permits), target groups' ability to understand materials, program implementation, communication tactics, and program content and program logic. This step will guide working groups in the definition of pilot phase objectives, sample selection, timing and the production of the administrators' guide and program materials. Furthermore, working groups will publicize and launch the program.

STEP 5: PHASE ONE IMPLEMENTATION

Following the program optimization according to the pilot study, the health and nutrition program is ready to be implemented in its first phase. This step gives recommendations for running the program on a day-to-day basis and how to make it sustainable. Working groups will be guided through the organization of kick-off events in order to make the program known and motivate participants. It will also emphasize the importance of implementation accompaniment and follow-up as being present during the implementation phase is very important to ensure that there not be any difficulties or blockages in the administration process, in addition to ensure the proper use of the materials. Finally, working groups should implement their defined evaluation plan and analyze the results. The overall results of the evaluation provide clear conclusions about the strengths and weaknesses of the program as well as about its cost-effectiveness.

STEP 6: FOLLOW-UP REPORTS AND PROGRAM CLOSURE

Working groups should draw up reports at the end of each phase of the program implementation, as well as at the closure of the program. These reports allow communication with partners, stakeholders, scientific communities and the general public. Reporting is also to be used as a means for the working group to look back on the process and formalize the strengths and weaknesses of the program and the process of development. Included in these reports should be a summary of the development of the program, its outcomes and the next steps for scaling up or recommendations for adaptation and re-use. Final Reports should target internal and external partners, policy-makers, stakeholders, researchers, health and education professionals and the general public. They should include information on the program development, conceptual framework, evaluation and should conclude with the program's final outcomes and subsequent research questions.

THE DINE PROJECT

THE DINE PROJECT
(DANONE INSTITUTES DEVELOPING NUTRITION EDUCATION)

The DINE research project was conducted with the objective of studying the current nutrition and health programs worldwide in order to understand the optimal conditions for their development, implementation, evaluation and sustainability.

Nutrition and physical activity-related health problems are gaining ground in a universal way. Nutritional deficiencies are a prevalent issue in today's society, and are not limited to the developing world. Increasing numbers of children worldwide suffer from insufficient levels of vitamin D, iron and calcium, for example.

In addition to these nutritional problems, food and lifestyle habits are linked to disturbed sleep patterns, psychological disorders and lowered academic performance.

Other major health issues such as type two diabetes, overweight and obesity are also becoming more common among children. Obese children are at high risk for nutritional problems due to the inadequate intake (in excess or insufficient) of certain nutrients given their body mass. Overweight and obesity are recognized by the World Health Organization to be a pathology and world epidemic and are closely linked with health and nutrition habits (WHO, 2000). 280,000 people die each year because of overweight and obesity; " obesity is not only a disease, but a disease that kills " (Poulain, 2009, p.205). The International Obesity Taskforce (IOTF) estimates that up to 200 million school-aged children are either overweight or obese, obese children making up 40-50 million of that population (IOT, 2012).

Numerous contexts worldwide seem to be affected by one common phenomenon: a degradation of lifestyle through a decrease in energy expenditure and a change in the way we think about, treat and consume food. Food choice and lifestyle habits both come with complex social and contextual determinants, as have shown numerous researchers (Campbell *et al.*, 2002). Nutrition-related health problems are notoriously difficult to treat. Effective health prevention is critical and has been the object of the research upon which the concepts and ideas in this book were developed.

As determinants of health, good food and lifestyle habits must be developed from an early age. For over twenty years, the Danone Institutes worldwide have taken action in the field of nutrition education for children. This book was written as a result of the Danone Institutes Developing Nutrition Education (DINE) study on a selection of existing nutrition education programs around the world.

DINE is a targeted research project supported by the Danone Institute International. It was designed to inventory and study the current nutrition education initiatives within the Danone Institutes and the Danone Company worldwide. Programs were quantitatively and qualitatively studied at several different stages (development, implementation, closure) within their local cultural contexts in order to draw conclusions as to the optimal nutrition and health program development process.

Surveys collected information about program key facts (timeline, levels of participation, evaluation, stakeholders and perceptions). The resulting quantitative data allowed for the selection of programs and research questions for an in-depth study. Qualitative interviews were conducted with over twenty program coordinators, working group members, program administrators and participants. Observations were also made of the programs in action.

The global DINE project studied nearly fifty programs in over ten countries. It collected specific tips and tools for developing, implementing and evaluating relevant health and nutrition programs. The tools and the concepts presented in this book are aimed at project coordinators responsible for the development and sustainability of health and nutrition programs for children.

Below we will present a brief summary of the results of the DINE study that lead to the publication of this book.

GENERAL RESULTS - DANONE INSTITUTES AND NUTRITION EDUCATION PROGRAMS

The Table 1 below summarizes the general findings from the DINE study. These results concern the current situation of nutrition and health program development within Danone and the Danone Institutes.

STRENGTHS:	WEAKNESSES:
• 20 years of experience in nutrition and health programs • More than 30 existing programs in 13 Danone Institute countries • Multi-level targeting approach (e.g.: educators, parents, children) • Diverse partnerships including with internal and external private/public structures (e.g.: Ministry of Health/ Education, NGOs, etc.)	• Few programs have been evaluated; very little follow-up with participants or administrators • Although some programs are evaluated for their use, there is no accurate understanding of the final outcome or efficiency of DI programs (neither means nor results)
OPPORTUNITIES:	**THREATS:**
• The DIs have a legitimate role to play in nutrition education globally given their mission • Disseminate to the largest number = multiply partnerships and program potential • Increase sharing between countries • Develop joint DI programs • Develop new education strategies • Use partnerships with Danone for access to a greater number and wider dissemination	• Limited evaluation = decreased credibility of programs and lack of concrete plans for development or improvement

Table 1

SPECIFIC RESULTS FOLLOWING THE IN-DEPTH STUDY OF SIX HEALTH AND NUTRITION PROGRAMS

A more detailed study of health and nutrition programs around the world allowed for the observation of different kinds of programs in a variety of cultural contexts.

Table 2 below summarizes the specific results from the in-depth study of the construction, implementation, perceptions and evaluation of six of the fifty programs within their cultural contexts. The following programs where studied in depth (detailed descriptions of the programs are available in Appendix A):

- ABECEDA, DI and Danone Czech Republic
- "Bon appétit, bouge ta santé!", Danone Belgium, Club européen des diététiciens de l'enfance (CEDE), the Société belge de pédiatrie (SBP), and the Danone Institute in Belgium
- Faut que ça bouge! DI France
- Kit Petite Enfance, DI France
- Eat Like a Champ, Danone UK

The following results display the strengths, weaknesses, opportunities and threats of the above programs.

STRENGTHS:

- Programs with an evaluated program pilot phase
- Personal contact with educators (program administrators) for increased commitment and better implementation
- Multi-level targeting: parents, children, educators
- Diverse working groups; clear roles for each member
- Diverse partnerships, providing multidisciplinary, complementary competencies
- Involvement of partners in program construction process – "teamwork"
- Cooperation between DIs for intercultural programs and program sharing
- Clearly-defined action plans including program objectives, aims, targets, future plans and evaluation
- "ready-to-use", adaptable material for teachers including concrete instructions and examples for implementation
- Collaborations with partners broadens and increases dissemination

WEAKNESSES:

- Evaluation strategy not defined or taken into consideration during program construction
- Lack of contact between DI program team and educators/parents, lack of availability and accompaniment in local implementation process
- Lack of action plan with clear and defined program objectives
- Very little distance taken from program for constructive criticism of the program or its construction process
- Failure to gather feedback from participants

OPPORTUNITIES:

- Educators should be made more aware of the health stakes and how they can play a role in a concrete way
- Use collaborations with public or private organisations in order to widen access to target group and disseminate program
- Create partnerships at the local level for adaptation of program to local context (public health needs, demographics, culture, etc.)
- Because of the recent general increase in public health issues, health and nutrition programs are multiplying but not showing specific improvements to the targeted health problems – the DIs need to take a new, innovative angle of action

THREATS:

- No contact with local program administrators (educators) and no real evaluation strategy leads to initiatives that have no real measurable impact

Table 2

DISCUSSION

TOWARD INNOVATIVE APPROACHES TO NUTRITION EDUCATION

The results displayed above raise questions about the pertinence of the current Danone and Danone Institute nutrition and health initiatives. Discussions with teachers lead us to the understanding that program administrators lack adequate training in nutrition and health and are not convinced that they have a role to play in children's nutrition education within the school. It is difficult to expect teachers to transmit messages by which they are not, themselves, convinced.

Parents' role in children's adoption of healthy food and lifestyle habits is crucial . However, several interviewees described the parents as difficult to involve in the implementation of health and nutrition programs in the school. We found that parents need more information about these initiatives and about how they can work together on this issue.

These findings may indicate a need to change our educational approach and consider targeting other population groups. Some programs have done this. One of the programs studied is aimed at school superintendents who gather and distribute tools and information for nutrition programs and policies in schools, for example. This program thus addresses the issue on a political level, encouraging sustainable environmental changes.

Furthermore, studies show that environments play a large role in food choice (Booth *et al.*, 2001; Goran & Weinsier, 2000; Hill, 1998; Jeffery & Utter, 2003; Prentice, 2006). New programs should prioritize environmental changes to schools and communities, as well as individual and community education and information.

Although the results of the DINE study have highlighted the unknown real impact of the current and previous health and nutrition programs for their lack of evaluation, they have revealed which elements of their construction and development are optimal. The future will highlight the need for pertinent programs and this document will allow working groups to contribute to public health in a concrete way.

EVALUATION

As mentioned in the results section, the DINE study revealed that very few programs are evaluated. Programs without thorough evaluations are unable to assess their success in achieving their purpose and objectives. Furthermore, program evaluations are crucial for confirming the correct choice of target group(s) and key messages. A lack of evaluation limits the credibility of the program and limits the opportunities for communication about the impact of the program. Given public health budget decreases in Europe and globally, it is now essential to identify the most cost-effective programs.

The DINE study revealed that the proximity of the working group members to the project most often prevents them from making objective, even informal, observations about the outcomes of the program. Engaging an independent organisation or agency with distance from the project is preferred when possible.

The DINE project revealed the importance of health and nutrition programs which develop simultaneously program interventions and corresponding evaluation plans. Thorough, objective-driven evaluations should be conducted at all stages of the program development and implementation in order to assure that the program acts in the way it was designed to. Each chapter of this book will include specifications for evaluation.

SCALING UP PROGRAMS

The DINE project revealed the value of programs with follow-up plans and which evaluate the evolving needs of the target groups in order to plan subsequent program phases. This issue will be addressed in this document and we would like to emphasize the importance of continuous, long-term programs. Scaling up a program must be the result of an evaluation of the program and the new and evolving needs of population groups.

DINE was designed, proposed and carried out by Carol Anne Hartwick[1], PhD candidate and research intern at the Danone Institute International, and directed by Dr Jean-Michel Antoine[2] and Dr Damien Paineau[3]. Specific questions concerning the project may be addressed to: danoneinstituteinternational@danone.com.

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INTRODUCTION

INTRODUCTION

The objective of this book is to build upon the results of the DINE study and on the experience of the Danone Institutes to provide a concise, practical tool for developing, implementing and evaluating nutrition and health programs for children ages two to 18. The aim is to guide project leaders worldwide through a sequence of coherent steps toward effective, pertinent and culturally relevant programs.

The development of this guide was made a priority by the DII as limited information is currently available concerning the optimal conditions for health and nutrition program development. Although nutrition and health programs seem to have been developed in abundance in the past 10-20 years and effective strategies are being revealed, we have a limited indication of their success and of the optimal conditions for their development. Public and private organizations worldwide invest large amounts of money, time and effort in health promotion through the development and implementation of health and nutrition programs in schools, communities, and through communication campaigns. Concrete, thorough evaluation and follow-up programs are necessary in order to gather feedback from the participants and for the future improvement of programs, but also to evaluate if the investment was worthwhile and to validate the methods and objectives of the program.

This book gives examples from a selection of Danone Institute and Danone Company programs worldwide that were studied through the DINE project. This guide has been designed to organise the findings into easy steps for project managers as to the development, implementation and evaluation of health and nutrition programs. We provide a harmonization of the current and future practices by giving relevant, adaptable recommendations.

WHO IS THIS BOOK FOR?

Individuals in a wide variety of roles may be involved in developing health and nutrition programs. Among others, governmental officials, community leaders, organizations, major stakeholders, companies, teachers, etc. may be involved. This book is aimed at any individual in charge of or involved in developing and implementing health and nutrition programs.

PROJECT COORDINATOR... IS THIS BOOK FOR YOU?

"I coordinate the activities of our non-for-profit organisation which strives to partner with meaningful structures in order to promote healthy physical activity and food habits among children. I am working with the schools in our local community in order to develop a program that has clear objectives for change in our specific community. I see the importance of involving private and public structures in this process as each brings different competencies and past experiences. We strive to stimulate social and environmental changes."
Maria, Non-profit Organization member

"I work for Danone and I look after external communications. Our company was looking to work toward our mission by making a real difference in the community on a serious health issue linked to nutrition. I have been working with colleagues at Danone and scientific experts in order to lead the co-creation of a pertinent health program that could make a real difference in the lives of the children involved and their school and community environments."
Lucie, Communications Manager

"I am a teacher at a large primary school in our community and I have always been interested in health and nutrition. Seeing children every day and the degradation of their eating habits has been concerning me for a number of years, especially with the rising rates of obesity and other health issues. I wanted to see a real change among the students at my school and to play an active role in making the change reality. I lead the development of a program that educates children about healthy lifestyles and creates encouraging environments, offering them the components of a healthy lifestyle. I have involved local health care professionals and private structures for the cause."
Nina, Grade 2 teacher

HEALTH AND NUTRITION PROGRAMS

For the purpose of this document, we will consider health and health and nutrition programs to be any actions created by a credible organization or structure, which aim at improving the health and lifestyle habits of a specific target group.

Program materials should be related to the appropriate school curriculum or, in the absence of a formal curriculum, a framework, e.g. the European Food Framework (http://www.europeanfoodframework.eu/).

THE SOCIO-ECOLOGICAL APPROACH TO HEALTH PROMOTION

The methodology presented in this book is based on the socio-ecological approach that considers health promotion as a social and environmental issue as well as an individual one. This book promotes therefore the creation of environments that encourage children to adopt healthy habits. These programs aim at achieving environmental changes as well as individual ones, as social and structural changes are important for the sustainability of individual ones.

In 2001, SL Booth and colleagues illustrated the need to take into consideration the social, cultural, physical and organizational contexts, called the "ecological niche", in which children are raised to stimulate food choice and physical activity changes (Booth *et al.*, 2001). Interventions that create environmental changes, reducing barriers for the adoption of active lifestyles, have the potential to induce passive behavioural changes (Swingburn *et al.*, 1999). J Sallis and N Owen have named this the "socio-ecological" model (Sallis and Owen, 2002). The interest of targeting, simultaneously, the individual and its social and organizational environment was recently confirmed by an intervention targeting physical activity and sedentary lifestyles among middle school students (ICAPS), based on the dynamic interactions between individuals and their social or physical environments (Simon *et al.*, 2008).

HOW TO USE THIS GUIDE

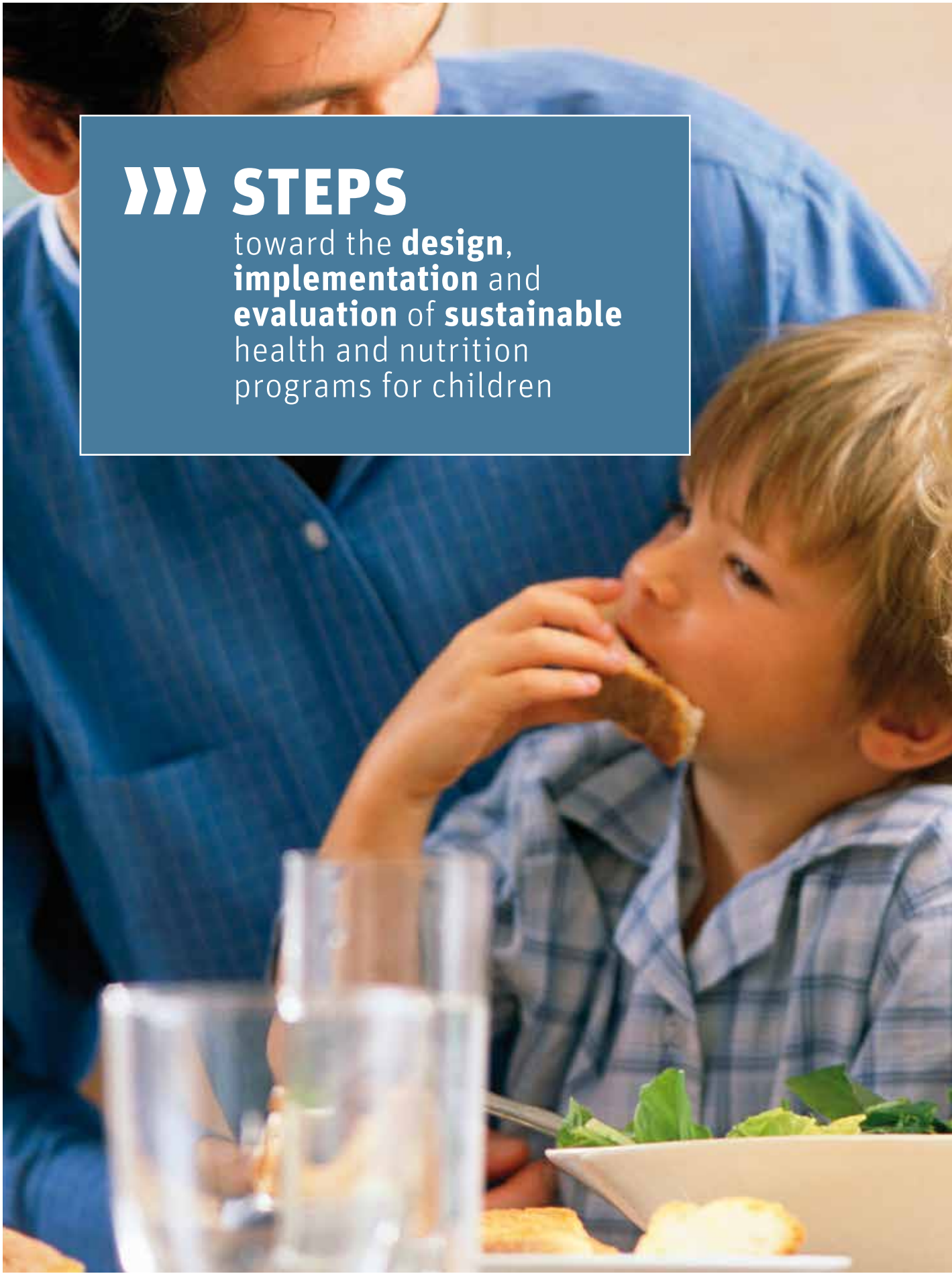
This book has been designed as a guide and our aim is that it be much more than a sequence of required steps for program development. Our ambition is that this guide and the examples contained within it lead project coordinators through reflections which will enrich the nature and quality of their future project.

This guide should be used as a reference throughout the life of the program and can be useful for the improvement and evolution of existing programs.

We have researched the experiences of several health and nutrition programs and are looking to help project leaders build programs in light of this our experience. This is a practical tool for turning this research into action. Each chapter ends with a checklist to help the working group identify what has been done and what needs to be done next.

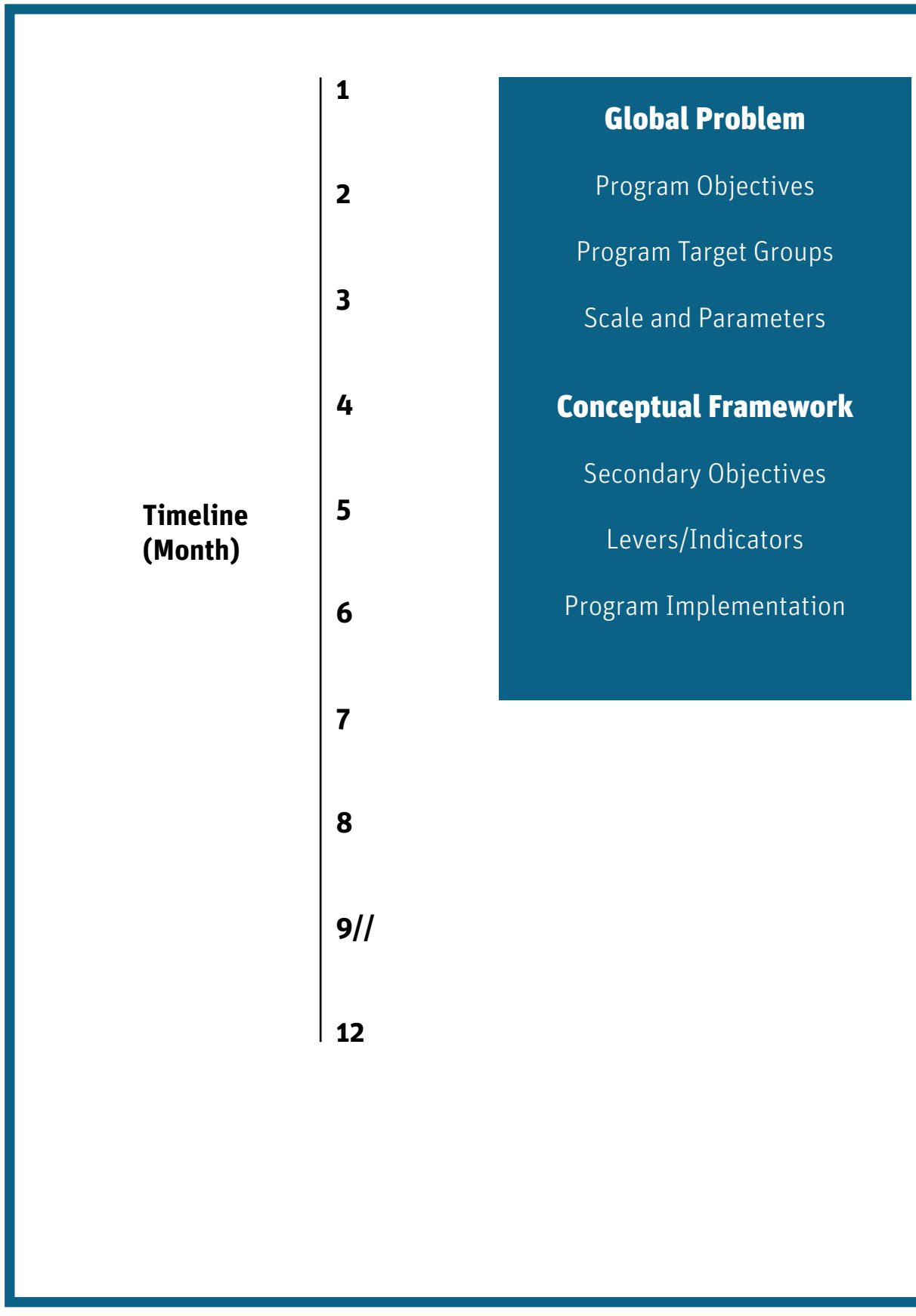
Key words and phrases that are bolded in the document are found in the glossary in section nine.

We consider evaluation to be an imperative component to all health and nutrition programs. It must, therefore, be a priority during all phases of program development and implementation. There are several stages at which evaluation is especially valuable and we will outline them throughout this guide.



STEPS

toward the **design**, **implementation** and **evaluation** of **sustainable** health and nutrition programs for children


Timeline (Month)
1
2
3
4
5
6
7
8
9//
12
Global Problem
Program Objectives
Program Target Groups
Scale and Parameters
Conceptual Framework
Secondary Objectives
Levers/Indicators
Program Implementation

Evaluation Plan

Objectives

Strategy

Methodology

Prepare Pilot Phase Program Implementation

Pilot Evaluation

and Program Improvement Plan

2nd Phase Evaluation

Implementation & Improvement

Program

Implementation Plan

Follow-up Reports

Final Reports / Program Closure

Program Improvement Plan

STEP 1

Defining a global problem and researching its specific context

STEP 1 | DEFINING A GLOBAL PROBLEM AND RESEARCHING ITS SPECIFIC CONTEXT

The **initiating group** of a health and nutrition program must first define the **global problem** that the program will address. What health issue will the program work toward? The first ideas should be very broad, allowing for maximum flexibility in program design. Examples include increased rates of obesity, malnutrition, sedentary lifestyles, cardio-vascular disease, sexually transmitted infections, etc.

The project leader and colleagues from the initiating group should bring together a panel of experts in the health field to make **mind maps** around ideas together. It is very important that the **expert panel** be involved in this reflection process as its members are aware of the current health issues in the given context. This will make choosing the global problem easier. Experts can be sought out from research institutes or organizations or through company contacts and should be from various disciplines such as sociology, psychology, nutrition, medicine, dietetics and public health.

CHOOSING A GLOBAL PROBLEM IN LINE WITH THE MISSION OF THE INITIATING GROUP AND CURRENT PUBLIC HEALTH ISSUES

The global problem should be in line with current public health issues and the interests and mission of the group initiating the program. For example, a sports club or company providing sports apparel might choose to address current public health concerns around increased sedentary lifestyles and decreases in family practice of physical activity, etc. On the other hand, a school with children presenting nutrition-related health issues may focus on the improvement of the nutritional quality of children's lunch meals at school (ex: packed or canteen lunches). Other global problems may include disturbed eating and sleeping patterns, nutrient deficiencies (ex: vitamin D, calcium, iron, etc.) and excess BMI, for example.

Two different mind mapped reflections should be made with the initiating group and the expert panel: one around the current health and nutrition issues in the context chosen for intervention, and one around the missions and areas of interest of the initiating group in question. Links should be sought between the ideas presented in the two mind maps in order to formalize a list of potential problems that the program could address in the given context. Template 1 in Appendix C can be used to organize mind-mapped ideas and define a general problem.

The program's primary objective in response to the global problem will be chosen in Step 2. The recommendations in this chapter and in chapter two will guide **project coordinators** and **working groups** toward narrow, specific program topics for which they will be ready to formulate appropriate objectives and hypotheses (Steps 2 and 3). For the purpose of this document we will refer to a working group as the team of individuals involved in the development of the health and nutrition program.

EXPERT PANEL

Once the global problem has been chosen, the first step toward narrowing it down is to understand the specific intervention needs of the target population in the given context. The expert panel in the working group should be asked to prepare an expert report regarding the current literature relevant to the specific context within which the implementation of the program is planned. If the review is not specific enough, the program may lack pertinence in its specific local context.

Depending on the global problem and the context, there may be gaps in the available literature. If the resources of the project allow, this may be an opportunity for the program to engage in a pre-program research project. This may be necessary especially for programs for very specific contexts and/or target groups. For example, for a program developed for a specific school, information may be gathered through interviews or surveys conducted with children, staff or parents prior to the development of the program. This provides a more specific idea of the intervention needs.

On a larger scale, research may be conducted to learn more about the general needs for intervention of a larger population group. The focus box in this section features the Linear programing model which can be used on existing nutritional data in order to reveal the needs for general dietary improvements for a population. The linear programing methodology is a very accurate tool for developing pertinent health and nutrition programs.

FOCUS BOX I
TOWARD NUTRITIONALLY ADEQUATE MODEL DIETS

Literature shows that linear programing can use observed diets to calculate nutritionally adequate model diets on an individual basis (Mathieu Maillot, Vieux, Amiot and Darmon, 2010).
Nutritional recommendations can provide general guidelines to a population group about how to consume the nutrients required for good health however their effectiveness is not sure as food categories are not well defined and recommendations do not take into account real foods (*Ibid.*).

The linear programing model takes into consideration the individual food behaviours in order to provide dietary improvements which take into account personal preference as well as nutritional needs. It takes data on individual diets and uses a mathematical optimization tool to provide, for each individual, a corresponding optimized modelled diet which fits with a set of nutrient recommendations. A statistical analysis can then be used to determine the gaps between observed and modelled diets and to show the optimization in food choices needed to reach recommendations including personal preferences (*Ibid.*). Indeed, the model uses each observed diet to meet the nutritionally-adequate modelled diet simultaneously with a whole set of nutrient constraints (based on nutrient recommendations) while deviating the least from the observed dietary food content.

In developing nutrition and health programs, this methodology can be helpful for defining:

- More precise dietary advice, specific to the local context
- Advice that takes into account real observed consumption (modelled diets deviate the least from the observed diet)
- Advice that takes into account constraints of realism (modelled diets are based on realistic changes according to local food habits and market)

This methodology was applied to French dietary data and variations in weight, energy and nutrients between observed and modelled diets were calculated for each food group (n=7), with a focus on milk-based products (n=4 categories) (Clerfeuille *et al.*, 2013). The diet optimization process increased the weights of three food groups: fruit and vegetables (+62%), starchy foods (+37%), and dairy products (+19%) while decreasing the weight of the other food categories, namely mixed dishes and snacks (-58%), meat fish poultry and eggs (-12%), added fats (-31%), and sweets and savory products (-15%) (*Ibid.*). Across milk-based food categories, the optimization increased yogurts (+60%) and milk (+17%), and decreased cheeses (-48%), without change to milk desserts. Cheeses represented one out of two consumed portions in observed diets, while in modelled diets cheeses, milk and yogurts each represented approximately one portion per day (*Ibid.*).

These results confirm that a large increase of plant-based products is needed. They also show that rebalancing the intake of milk-based products in favour of the lowest energy-dense ones (i.e. yogurts and milk) will help reach nutritional adequacy in this population (*Ibid.*). According to this study, the SFA reduction must come from cheese within the dairy category, meaning that SFA coming from dairy food categories with low energy density can be increased (*Ibid.*). This example shows that, although an individual may be fulfilling the required nutritional daily intake recommendation of a specific food category (ex: three milk products per day), the individual must take into consideration the kind of product in order to reach a nutritionally adequate diet.

The linear programing methodology has been applied to other cultural contexts and has shown interesting results. Maillot and Drewnowski have used the model on American data (on a population basis) and have shown that compliance with the 2010 sodium guidelines will require large deviations from current eating behaviours and/or a profound modification of the U.S. food supply (Mathieu Maillot and Drewnowski, 2011).

This methodology could also be usefully applied to other age categories including for children. The INCA2 study in France leads us to believe that this methodology applied to data on children could lead to similar results as it did for the adult population described above. The focus boxes in the following chapters will be based on hypothetical results of the linear programming methodology applied to data on child subjects.

The expert report and/or pre-program study are necessary in order to verify if and how the global problem exists in the given context and which factors are involved. For example, if the global problem is increased sedentary lifestyles among children, the expert report should clarify what the contributing factors are and which population groups are the most affected. Perhaps it will show that children are not active enough during the time they spend at school because the educators have pressures to focus on other priorities within the school day. The children may decide for themselves whether they spend recreation time being active or not. On the contrary, maybe the expert report will find that children are most sedentary during the evenings as they spend several hours per day in front of the television. In both of these cases, the children should make healthier choices about their leisure time and could benefit from a program focusing on the importance of physical activity.

Furthermore, the expert report should explore the general needs and expectations of the population groups most affected by the problem.

Following the expert report and possible pre-program research, the initiating group should work together with the experts to formulate ideas about which factors could be addressed and for which specific population groups. The expert report should also reveal ideas for the general objective of the program. Conclusions should be discussed during the kick-off working group meeting following their formalization in the form of a creative brief.

CREATIVE BRIEF

With a clearly defined **global problem** and the contributing factors and concerned target groups, the **program coordinator** will be able to put together a **creative brief** about the project for diffusion among potential project **partners**. The brief should describe the global problem to be addressed as well as the specific contributing factors, concerned population groups, and, finally, the needs and expectations pertaining to the given local context. In some cases, the brief may include a mind map of ideas for the target groups, program objectives and evaluation possibilities. Included in the creative brief should be the working group roles. Program partners should be encouraged to suggest the role in which they would feel the most comfortable and where they could bring the most expertise. The brief should then be presented to a select number of potential project partners who will be resourceful in the development of each phase of the program.

CREATIVE BRIEF CHECKLIST

- ✔ Description of **global problem** and conclusions from the expert report
- ✔ Presentation of the local context of the program and the initial specific local needs (factors contributing to the problem) and expectations for a health and nutrition program
- ✔ Suggestions for levers which could be used to stimulate change
- ✔ List of population groups affected by the problem and most likely to benefit from a program
- ✔ Need for program **partners** (expertise and interests to act on the problem)
- ✔ Total budget including evaluation
- ✔ Tentative timeline for the project (including design, evaluation and implementation phases)

BUILDING A DIVERSE WORKING GROUP

In addition to the expert panel, including relevant partners in the construction of a health and health and nutrition program is indispensable. Their engagement in the project should go far beyond using their financial resources for the program development. Not only will partners bring expertise, field experience and diverse interests to the project, but involving local partners and stakeholders will also help with access to the target group and program sustainability.

Partners should co-construct the program with the initiating group. This is why their careful selection is important. Connecting with partners is an indispensable step in the construction process, as these precious relationships will define the image, credibility and quality of the program. Not only will program participants and administrators find comfort in seeing the involvement of an organization they trust in the development of the program, but the expertise that the organization can actually provide to the working group is most often irreplaceable. Upon integration of the project, partnering organizations should become co-constructors of the health and nutrition program.

In addition to the scientific experts already present in the working group, it is important to preselect one or two partners who can assist with and nourish the discussions at the kick-off working group meeting. Adding partners is possible at any time of the program development as the need for different skills will become more precise as the program details do. Following the development of the evaluation plan and conceptual framework in Step 3 will be a key moment to re-evaluate partnering needs.

Putting together a working group with multiple and diverse skills and levels of experience will allow for highly fruitful discussions leading to an increase in the potential quality of the program. The initiating group should invite different types of program partners: governmental, non-profit organizations, scientific institutions, parental groups, private agencies and companies, etc. Governmental authorities should be included in order for the program to be relevant to the school curriculum and nutritional recommendations if national campaigns exist.

Each partner should hold a distinct role in the working group. According to the specific problem that the program will address, different competencies will be needed for its development, implementation and evaluation. Initiating groups should only engage in collaboration with partners whose activities and image are coherent with the program's mission and the image that it is meant to portray to potential participants and the general public.

ACTION PLAN

The project coordinator should formalize a tentative plan of the work leading up to and including the implementation of the first phase of the program and its evaluation. The development of the program will depend on the specific organization of the initiating group and the working group members however it should take between nine and twelve months. The first phase of program implementation should last around one year.

KICK-OFF WORKING GROUP MEETING

The **creative brief** developed and distributed to potential partners will be useful for the first meeting of the initial working group. The program coordinator should organize and run this meeting to launch the development of the program. The objectives of this kick-off meeting should be the following:

- Present the general problem, key findings from the expert report/pre-program study and general context analysis; discuss these elements with partners and scientific experts
- Make mind maps around specific levers that the project would be capable of using to stimulate change
- List possible target groups and the program approach needed in order to reach them; decide upon the age group and target for the program (§ below)
- Decide on possible general objectives for the program
- Discuss program evaluation (§ Step 3.b.)
- Discuss and make mind maps of actions which would respond to specific local needs
- Discuss the possible need to engage other partners in the working group
- Assign working group roles (§ *Assignment of Tasks*)

The **initiating group** should present the general problem and expert report conclusions to the working group. **The program coordinator** should then lead the group in a series of discussions and mind maps around the following topics: levers for change, feasible general objectives and possible target groups of the future program. According to the expert report/pre-program study and conclusions drawn about specific local needs, the working group should decide which group of the population could be the program's primary target and which will be catalysts.

CHOICE OF TARGET GROUPS

During the kick-off meeting, discussions should be facilitated around the population groups to be targeted by the program. The expert report and review of literature pertaining to the chosen global problem should have aided in identifying specific groups of the population that are especially concerned by the problem and those most in need. Health professionals working in schools or other community settings (doctors, nurses, lunchtime supervisors, etc.) should be asked about the needs of the population. The following factors should be considered when deciding on target groups:

- The program focus (§ *Choosing program focus points*)
- The group's specific needs and expectations in nutrition and health (which group is the most in need?)
- The group's readiness for intervention
- How easy the group will be to access
- The coherency between the group and the program initiator
- Group characteristics such as gender, socio-economic profile / immigrant population, age group

Furthermore, it is important to keep in mind that the primary target audience does not always have to be the population group most affected by the problem. For example, if the global problem is childhood obesity, the program mustn't necessarily target the children. Perhaps the literature review revealed that one of the main causes for childhood obesity in the given context is poor school meals. A program in this context could respond to the problem by targeting the school policy-makers, informing them about the dangers of unhealthy meals and cost-efficient ways in which they could improve their nutritional profiles.

DINE and other studies (Blom-Hoffman, Wilcox, Dunn, Left and Power, 2008, Hollar *et al.*, 2010) have shown that multi-level targeting is a success factor for health and nutrition programs. Reference should be made to the expert report and pre-program study results in order to reflect on which groups need to be targeted and in which order. The use of intermediary, or catalyst, target groups will aid the program in meeting its objectives. That is to

say, although the ultimate target could be the policy-makers, it would be beneficial to inform and involve other groups such as teachers and families. In order for families and children to accept the changes made to school meals, they should also be informed and educated about why the changes were made and how they should actively collaborate to improve the situation. It is important to target the population group and its entire "ecosystem", as per the socio-ecological approach to health promotion (this will be discussed in more detail in Step 3 and 4).

Defining specific population groups to target is extremely important as it will allow the working group to take into consideration specific characteristics of the group. For example, it will be more difficult to design interventions for a broad target group, "children", than for a more specific one, "adolescents aged 12-14 from Priority Education Zone schools in Parisian Suburbs, France". Understanding the characteristics of a specific target group will allow the working group to cater the interventions exactly to the specific needs.

Once the primary and intermediary target groups have been chosen and specifically defined, the expert panel should research the profile, characteristics and specific needs of the population group (§ *Step 2 Evaluation*).

At this point the initiating group should invite members from the target group or other groups pertinent to the target population to participate in the working group.

ASSIGNMENT OF TASKS

In order to move forward with the project, the assignment of tasks should be discussed with the working group before the end of the kick-off meeting. For example, the working group may decide to collaborate with outside agencies for certain aspects of the design, implementation and evaluation of the program. Each member of the working group should have his or her own clearly-defined role. Who will be the **project coordinator** and who will be the **owner** of the program? Who will look after the contact with the target group? Table 1 in Appendix B shows a list of key roles along with their general duties. At the end of Step 1 of the program development, the following roles should be held by various working group members (from initiating group or partners): program owner, project coordinator, expert panel, evaluation coordinator.

STEP 1 EVALUATION

The evaluation procedures are necessary throughout the program design and implementation. This DINE guide will suggest aspects of the program which should be evaluated at each stage of its development. In the first step, after having defined the general problem and mind mapped other aspects of the program, it is important to evaluate the general problem in terms of the chosen target group. An evaluation should be done of the benchmark knowledge, habits and health status of the children at that time in the specific context of the program. The linear programing method may be useful (§ Focus Box: Toward nutritionally adequate model diets).

An evaluation committee should be made up of one evaluation coordinator, one member of the expert panel and two or three other people from the initiating group who have a scientific background and experience in evaluation. If these competencies don't exist within the initiating group, the program working group should call on external expertise. In this stage of the program development process, the committee should commence a diagnostic of the global problem and the related needs for intervention in the given local context (exact location of implementation) for the specific target group.

CONCLUSION

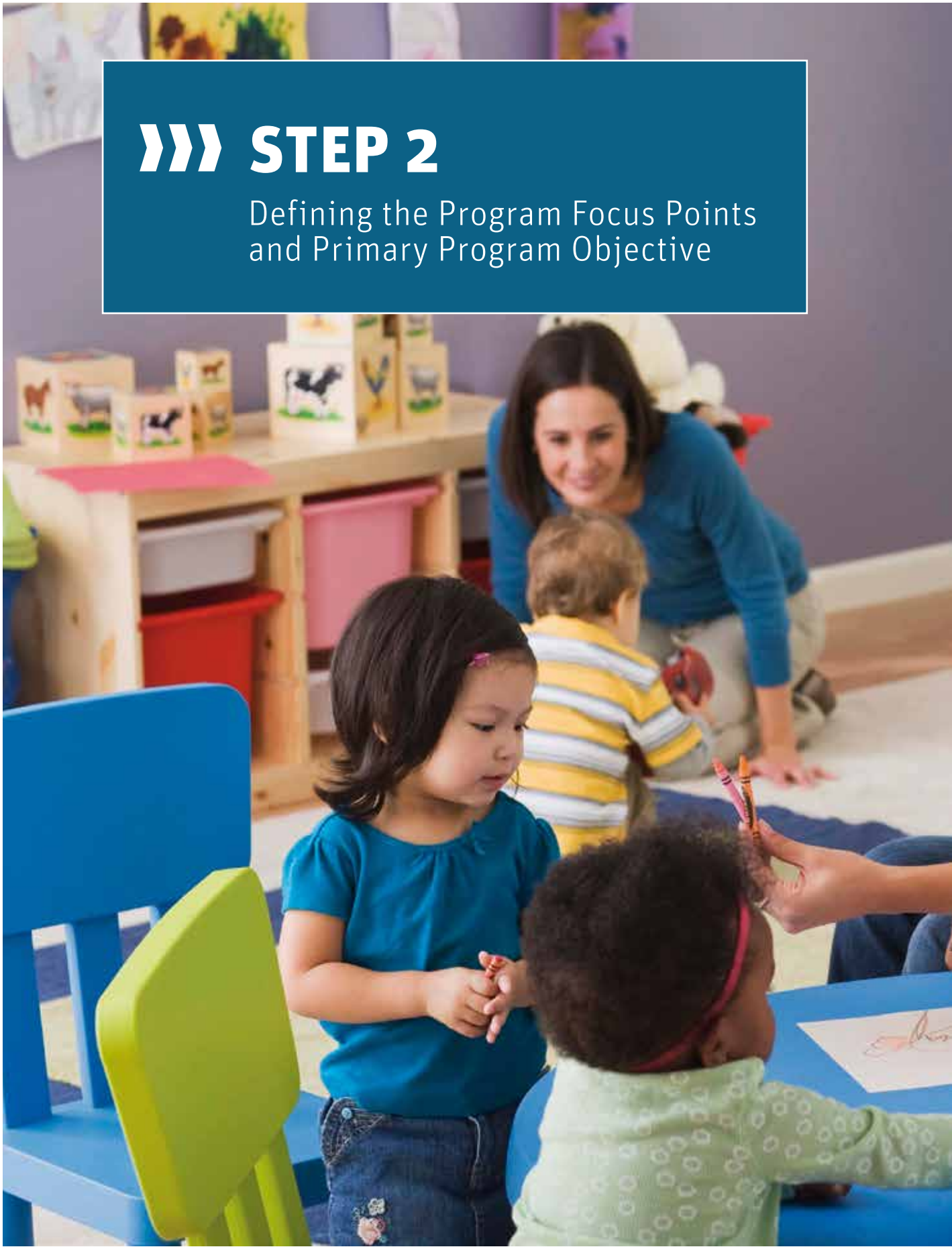
At the end of Step 1 the initiating group should be clear about the global problem, target groups and how the working group will work together to carry out the development and evaluation of the health and nutrition program. At this time, a report should be made for the internal authorities of the initiating group (board of directors, association members, etc.). This report should present the general aspects of the program as defined in Step 1, and should give scientific arguments as to the relevancy of the program for the specific context and the legitimacy of the initiating group to address the specific problem.

Following the review and validation by internal authorities, the project should be ready to move into the second phase of development: choosing specific objectives and defining specific needs.

STEP 1 CHECKLIST

The following elements should be formalized before moving on to Step 2. The program coordinator should verify that each element be completed.

- ✔ Description of general problem and conclusions from the expert report/pre-program study
- ✔ Presentation of the local context of the program and the corresponding specific local needs and expectations for a health and nutrition program
- ✔ List of possible general program objectives
- ✔ Suggestions for levers which could be used to address the problem
- ✔ Chosen program target groups
- ✔ Total budget allowance including evaluation
- ✔ Tentative timeline for the project (including design, evaluation, implementation)
- ✔ Clearly-defined roles for each working group member
- ✔ Plan for the evaluation of the specific local context of the program (needs/expectations)
- ✔ Tentative action plan of the work leading up to the implementation of the program (include all phases of development)



STEP 2

Defining the Program Focus Points and Primary Program Objective

STEP 2 | DEFINING THE PROGRAM FOCUS POINTS AND PRIMARY PROGRAM OBJECTIVE

Until this point, the ideas and objectives of the health and nutrition program should still be quite general. It is important, however, to narrow these general ideas down in order to build a sustainable program around attainable, realistic and pertinent objectives. The program must not aim at influencing the global problem as a whole, rather it should target specific factors contributing to it. We will refer to these as program **focus points**. This will allow the program to address the global problem in a concrete way, using specific levers to stimulate change.

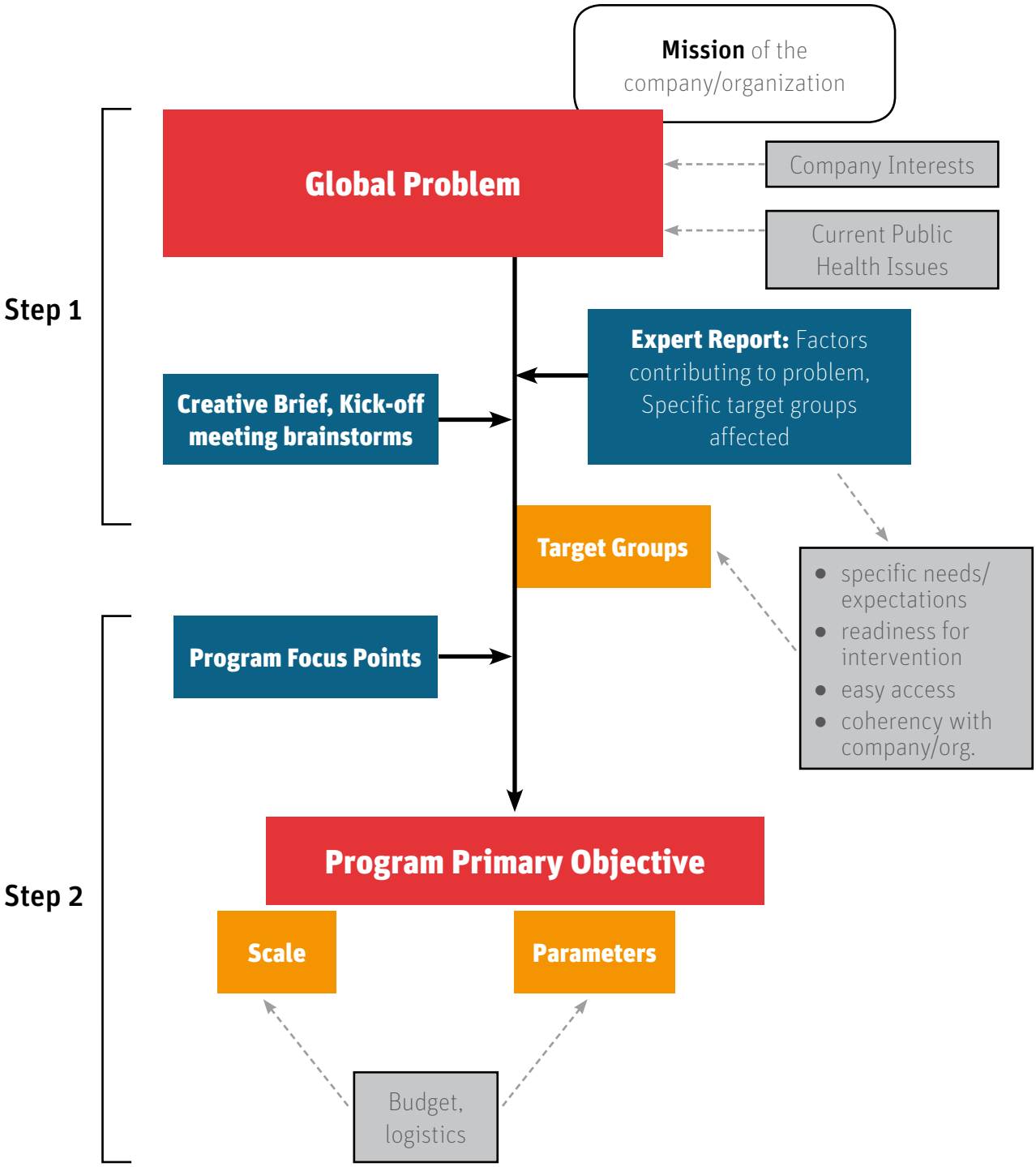
During Step 2, the working group will build upon the ideas mind mapped during the kick-off meeting in order to decide on its primary objective and specific aspects of the global problem for the program to focus on (program focus points). One or several working group meetings may be required for this step and should be spread over a maximum of two to three months.

The **mind mapping** process of the kick-off meeting should have led to a variety of ideas around specific aspects of the project: levers for change, target groups, feasible program objectives and the evaluation plan. These should be formalized by the project coordinator for further discussion and to help with decision-making at the next working group meetings. A one-page visual representation should be presented to the working group members and template 2 in Appendix C will help with this process. The project coordinator and initiating group can also pre-analyse the outcomes of the mind maps in order to propose some concrete ideas during working group meetings.

With the above representation and the expert report in mind, the working group meetings will aim at defining the program's focus, primary objective, and evaluating the specific needs and levers for the target groups in the given context. Defining these elements is crucial for the construction of the conceptual framework (the program's logic) and the program evaluation plan (Steps 3.a. and b.). The next sections will explain program logic models and how to use them to choose focus points. In the next chapter, the working group will design the conceptual framework and logic model for the program.

Diagram 1 illustrates the sequence of decisions to be made throughout Step 2.

Diagram 1: Steps 1 and 2 summary



PROGRAM LOGIC MODEL

In order for a program to work toward its objectives, each of its actions must be thoroughly thought out and linked to a **conceptual framework** or **program logic**. How does each action work toward reaching the program's objective? For the purpose of this document, the way in which a program works to achieve its objectives will be referred to as the program logic. The logic decides which outcomes will be intermediary and which will be long-term. This section will explain this concept.

If the global problem is excessive BMI among children, for example, a program could target healthy beverage consumption (which is an intermediate program outcome) as one of its health determinants/behaviours that could potentially lower excessive BMI (which is a long-term program outcome). Healthy beverage consumption is a determinant/behaviour that is influenced by one or several factors (accessibility to fresh free water in the school, for example) that can lead to specific program actions (modification of school policies, for example). The program's logic model assures that each action implemented by the program addresses a factor which has an influence on a specific health determinant of the global problem.

The DINE project has shown that the actions implemented by many health and nutrition programs don't follow a logic model. This complicates program evaluation and makes it difficult for a program to work toward achieving its objectives.

Health Promotion Switzerland has developed a guide toward outcome classification in health promotion and prevention projects (SMOC, Swiss Model for Outcome Classification). This model is particularly useful for the development of health and nutrition program logic models.

SWISS MODEL FOR OUTCOME CLASSIFICATION

The SMOC model was designed for the categorization of program outcomes however this book will use it as a tool for defining the program focus points, objectives and actions (conceptual framework and program logic). It takes into account the socio-ecological perspective of health promotion, as described in the introduction, and therefore allows for objectives around social and environmental changes as well as individual behavioural ones.

According to the SMOC model, there are four levels behind health promotion programs. The first, Level D, is directly linked to the health of the population (we call this the global problem). The second consists of the health determinants of the global problem (Level C) and the third level includes the factors of those determinants (Level B). These three levels must follow a logical sequence meaning that one influences the other which influences the other, etc. They must also each be linked to specific objectives. A fourth category (Level A) consists of the actions put in place to achieve the program objectives:

- Level D: Health benefits for the population group (for example decreased excessive BMI)
- Level C: Health determinants (for example, physical activity level of the target group)
- Level B: Factors influencing health determinants (for example, sports facilities available for the target group), and
- Level A: Actions leading toward health promotion (for example, motivation of individual healthy habits)

Each of these levels can be approached on the individual, social or environmental levels with corresponding concrete actions.

In chapter three, this method of classification will help working groups turn mind map and expert report results into pertinent, evaluable program actions with clear objectives. It will also visually illustrate the legitimacy of the program's focus and corresponding actions (§ *Choosing Program Focus Points*).

CHOOSING PROGRAM FOCUS POINTS

According to the socio-ecological approach above, there are several elements influencing a general problem. The health and nutrition program should therefore address the problem on the individual, social and environmental levels in order to influence the target group's ecosystem as a whole. Thus, the working group should identify the specific material, social and individual levers that will stimulate change for the target group in its given context, according to the expert report. For example, if the program educates children on healthy habits without making healthy foods available to them in the school canteens, the impact will not be as high as if the offer was coherent with the recommendation. If education and environmental changes are used together, the program outcome is more likely to be sustainable in the long term. This section will help working groups use the expert report and pre-program study results to decide which aspects are most logical and feasible to address.

The health factors and determinants should have been defined and included in the expert report or by research done prior to program development. A successful health and nutrition program will not necessarily address all of these however it should address one primary objective for the improvement of at least one specific health determinant of the global problem.

HEALTH DETERMINANTS OF THE GLOBAL PROBLEM

Defining the health determinants of the global program is extremely important for the success of the program as it will allow for a program focus based on real needs. The working group should decide which determinant(s) will be addressed by the program. The identified determinant(s) must be specific and the potential for change should be realistic and measureable.

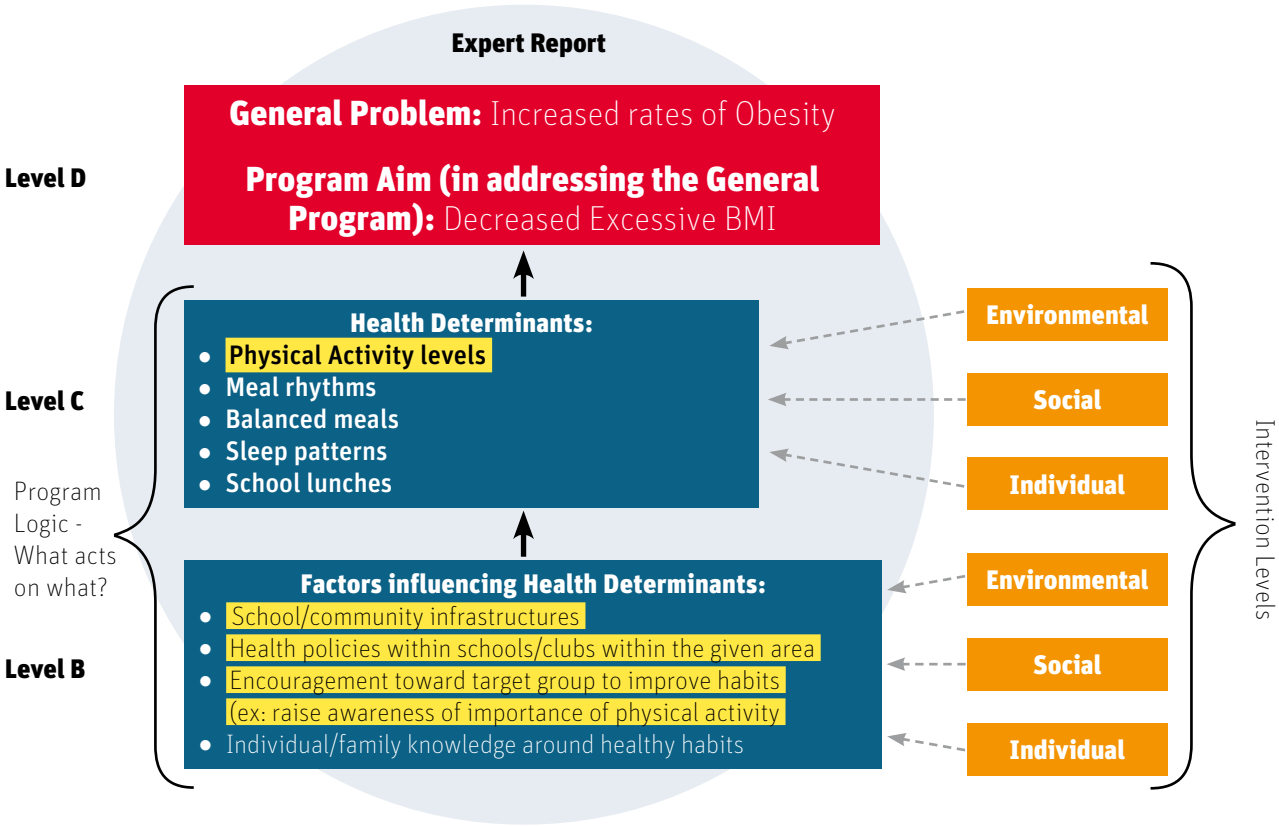
The choice of determinant to address may be based on several different factors: budget, legitimacy for intervention, preference, expertise of working group, level of target group needs, potential for influence, etc. The choice may also simply be based on the level of accuracy of the need for intervention of the given target group. The linear programing model, as described in chapter one, provides very specific information about the population group's needed dietary improvements, for example. It takes into account the individual food preferences of the population group and provides specific dietary improvement recommendations. The focus box in this section gives an example of how the results can give clear indications of program focus points and pertinent objectives.

FACTORS CONTRIBUTING TO HEALTH DETERMINANTS

The results of the expert report and research prior to the program development should show the factors contributing to the health determinants of the global problem. The working group should use them in order to list the health determinants of the global problem (Level C) and the factors influencing those health determinants in the given context (Level B). These elements should be included on the environmental, social and individual levels and we will call them program **focus points** as they are areas where the program could address the global problem. Listing the health determinants and their factors (§ Diagram 2) is very important for the understanding of what focus the program could take to address the global problem. It will help working groups be explicit about which factors they will treat and which they will not. The chart allows working groups to ask themselves questions and make informed decisions in accordance with the specific situation. The importance is around assuring a clear logic as to which factors influence which others, allowing for the definition of program objectives with clear, measurable indicators (§ *Step 2 Evaluation*).

With a complete list of program possibilities for each level (B-D, environmental, social, and individual), the working group should highlight those areas that will be chosen as program focus points. Having made these informed decisions, the working group will be able to justify their choices for evaluation. Diagram 2 below shows an example of how a working group might visualize the possibilities for a program and choose the areas which will be addressed (the chosen areas are highlighted in yellow).

Diagram 2: Example of visualizing the Global Problem and Influencing Factors – choice of program focus



The choice of program focus points should depend on the following elements: the specific needs of the population, the feasibility for impact, the resources of the program and the working group, identified levers for change, and the ambition(s) of the program and initiating group. Visualizing these possibilities in the form of a diagram will help the working group make informed decisions about the areas to be addressed and the intermediary objectives which will correspond (for intermediary objectives, § 3.1 a Conceptual Framework). Diagram 2 exists as a template in Appendix C.

The next three sections should be addressed simultaneously as their topics are closely related.

DEFINING REALISTIC OBJECTIVES

Formalizing and regularly reviewing the program objectives with all working group members is one of the most important steps of the development of the health and nutrition program. Although this step is most certainly one of the most important, it is often overlooked and programs often address general problems more than they work toward specific, attainable objectives.

The **primary objective** should be about stimulating behavioural and environmental changes that will allow the program to influence the global problem in a long-term, sustainable way.

PRIMARY PROGRAM OBJECTIVE

Working group discussions should be centred around the mind map results from the kick-off meeting, the results of the evaluation of specific, local needs (§ *Step 1 Evaluation*) and the program focus points. They should result in the choice of a primary objective that is "SMART" (Specific, Measurable, Attainable, Realistic, Time-related) and which responds to an aspect of the global problem. It is important to keep in mind that one single health and nutrition program is incapable of single-handedly solving the defined global problem. The importance is to limit ambitions to reasonable objectives with levers that can provoke change and leave other factors to be addressed in a later phase of the program or by other initiatives.

Although the primary objective of the program should aim at addressing the global program, it must be very specific to the chosen target group, parameters and scale of the program (§ *Program Scale*). For example, a health and nutrition program that has identified increased rates of obesity as its global program could have the following primary objective: increase daily physical activity levels of target group. A program with vitamin D deficiency as a global program may have increasing consumption of vitamin D fortified yogurt consumption of the specific target group.

The program **focus points** should be used to derive program objectives. The objectives must be in line with the specific area of the program focus points. Working group discussions around the program's objectives should focus on the following questions, keeping in mind the expert report, the specific target groups and their needs:

- What is realistic to change?
- What is measurable?
- What are the environmental, social and individual changes that can influence the global program (daily rhythm, meals available at school, education, etc)?

In Step 3 of program development, after having evaluated the target groups and their specific characteristics, the program's intermediary objectives will be defined.

FOCUS BOX II
PERTINENT PROGRAM FOCUS POINTS AND OBJECTIVES: DESIGNING A NUTRITION AND HEALTH PROGRAM BASED ON SPECIFIC AND REAL NEEDS OF THE POPULATION GROUP

In the French adult population, the linear programing optimization process (§ Step 1 Focus Box) significantly increased the weights of three food groups out of seven, namely fruit and vegetables (+62%), starches and grains (+37%), and dairy products (+19%). In contrast, the weights of all the other food groups were reduced, namely mixed dishes and snacks (-58%), meat fish poultry and eggs (-12%), added fats (-31%), and sweets and savoury products (-15%) (Clerfeuille *et al.*, 2013). This is in line with the French (Hercberg, Chat-Yung and Chauliac, 2008) and other European food based dietary guidelines, where the top three messages relate to the three groups presently increased by the diet modelling process (Clerfeuille *et al.*, 2013).

In France, these results are very useful for deciding program focus points and objectives. Supposing that an application of this methodology to data on children would produce similar results, the working group of a health and nutrition program for children in France could identify two health determinants of a global problem as the first two results of the above study: consumption levels of plant-based products and the balance of the intake of milk-based products in favour of the lowest energy-dense ones. The hypothetical nutrition and health program that will be the object of this and the following " Focus Boxes " will therefore focus on the first two important needs for change as defined by the study: increased consumption of plant-based products, rebalanced consumption of products in the dairy category (lowered cheese consumption and increased fresh dairy consumption) will help the target group to reach nutritional adequacy.

Before designing the program's **conceptual framework** or defining the primary objective, however, the working group must look into the factors contributing to this health determinant.

If the program is to be implemented in year five classes of a primary school, for example, the factors may be limited availability of plant-based and fresh dairy products at the school canteen, school policy around food consumption, limited information around how to balance food choices within a specific food category, a lack of coordination between the foods in canteen versus home meals, etc.

Although it is important for health and nutrition programs to intervene on the environmental, social and individual levels, they must not address all health determinants and factors contributing to the global problem.
Once the program has identified, however, which factors and health determinants will be addressed, the program's primary objective should be defined. In this case, the primary objective could be " at the end of the program's first phase, increase by 20% the number of children presenting suggested intake levels of plant-based products and a proper balance of the dairy product category ".

Below is a summary of the elements which could be part of such a program:

Global problem: increased obesity levels among French children and inadequate nutrient intakes

Health determinant: increase consumption level of plant-based products and modify the balance of the intake of milk-based products in favour of the lowest energy-dense ones

Factors: canteen foods, school policy, children's knowledge around balancing foods within a category, parent's awareness of school meal composition

Primary program objective: increase by 20% in the number of children presenting recommended intake levels of plant-based products and a proper balance between dairy product sub-categories.

Actions: to be determined with the conceptual framework in step 3

PROGRAM SCALE

Following the specific results of the needs and expectations evaluation conducted at the end of Step 1, the size and scale of the program should be discussed with the working group. Both need to cater to the specific needs of the global problem, and be coherent with the target group and primary objective. In defining the size and scale of the program, the budget and other resources should be kept in mind.

Where will the program intervene and how large will the target group be? For example, will it take place in one school, one town, on a national level? This should be evaluated according to the program budget and resources. It is preferable to start on a smaller scale in the first phase of a program in order to improve and perfect it for an eventual scale-up (if that is the ambition and the resources permit) in another phase of intervention.

For example, in the first phase of Eat Like a Champ (§ Appendix A), the program reached 18 London schools and in the second, 52. Following the positive feedback and interest in the program from various private and public stakeholders, it is now being developed in hundreds of schools across England. Scaling up a program is a very positive development and should be done gradually. The adaptation of ELAC was made for cities outside of London and thus the program was adapted to several different contexts. In the first phase of a program, it is preferable to choose one specific context and a small target group.

The results of the expert report and evaluation of specific needs will allow the working group to understand the areas of need and where intervention would be most feasible. It is important to keep in mind that the factors contributing to the global problem can be very different from one geographical area to another (as from one target group to another). The working group must be sure that the chosen participants are affected by the general problem and that intervention would be legitimate and pertinent in that specific area. Other factors should be taken into account in the choice of parameters for the intervention, such as: access to the population group (does the working group have access to a specific area?), possibility for intervention evaluation, etc.

STEP 2 EVALUATION: INITIAL DIAGNOSIS

The progress made in Step 2 will allow the **evaluation coordinator** to organize the initial diagnosis of the specific situation (including primary objective, specific targets, size and scale). This diagnostic of the specific situation within the defined target group and parameters will allow the design of a **conceptual framework** (Step 3.a.) around specific objectives and concrete actions.

The evaluation committee must look into the situation at each intervention level of the program (§ Appendix D: SMOC Guide) for the given parameters and target group in order to identify the specific levers which will allow the program to work toward its primary objective. There must be a formalized logical sequence to the program (to be defined in Step 3) and this diagnosis is crucial for its development.

TARGET GROUP PROFILE

Researching into the profile and characteristics of the target group and program parameters will guide the working group into the development of a program especially tailored to the targeted population group. The more that is known about the target group and its environment, the more specific the program will be. Interesting characteristics to look into are: cultural habits, education systems/tools, gender, socio-economical profile, beliefs, knowledge about nutrition, lifestyle habits, health status, specific needs for intervention, etc.

The evaluation committee should verify that the primary objective of the program is legitimate and pertinent within the specifically-defined parameters of the program. Can the proposed project really address the needs of the population?

ORGANIZATIONAL FACTORS

In order to stimulate environmental and social changes as well as individual ones, the initial diagnosis also needs to look into the organizational factors which may be levers or obstacles of the intended change. Including members of the target group in the working group and visits to the field are crucial components to understanding the realities of the field. If the program targets children in schools, for example, understanding the organization of the school is very important to the understanding of which factors will be able to be addressed and which ones are not feasible. If the primary objective is to decrease sedentary lifestyles among children during school days, for example, the working group must first know what the children do throughout the school day. If the school is organized in such a way that the children don't have a large enough area to play outside and they are spending their recreation indoors, a specific need would be to address this environmental factor (informing the children of the benefits of physical activity won't suffice). This diagnostic will allow for the definition of the initial needs and possibilities for action.

The program environment is an important factor for the success of the program. If, for example, the program promotes an increase in the consumption of fruits and vegetables, it must also make sure that the school makes fruits and vegetables available to the children. If the objective of a given program is to increase the daily physical activity of the children at school, time needs to be made available for teachers to fulfil the recommendation.

The environment within which a program is implemented will decide whether or not it can impact the target group as it was designed to. Contextual problems are sometimes the cause for negative efficiency results for a program in the case that they prevented it from being implemented correctly. The following are elements of the context to be taken into consideration: place, time, availability, current priorities, etc.

EXISTING PROGRAMS AND METHODS USED FOR SIMILAR TARGET GROUPS

The evaluation committee should look into other similar programs. Researching previous and current programs with similar objectives, target groups and parameters will not only avoid developing a program that already exists, but it will give the working group an idea of which experiences have worked and which have not.

This part of the initial diagnosis should look especially into program strategies which have been used for other similar programs and which have proven effectiveness. This will help the working group decide on the program framework in Step 3.a.

CONCLUSION

At the end of Step 2 of the health and nutrition program development, the working group should be clear on the primary objective, target group, size and scale of the program. These are the elements, along with the results of the initial diagnostic assessment, which will allow the working group to design the conceptual framework in Step 3.

The program coordinator should formalize these aspects visually to be presented to the internal authorities of the initiating group and the members of the working group at the first meeting of Step 3. Template 3 in Appendix C gives an idea of how these aspects can be visualized. At this time, the next steps for the project (Step 3) should be presented.

At the end of this step the working group may realize that the program development could benefit from other competencies and that other partners should be invited to join. Specific members of the target group population should be considered, as well as the professionals working with them.

STEP 2 CHECKLIST

The following elements should be formalized before moving on to step three. The program coordinator should verify that each element be completed.

- ✔ Presentation of the local context of the program and the corresponding specific local needs and expectations for a health and nutrition program
- ✔ Levels for intervention (according to SMOC guide)
- ✔ Primary program objective
- ✔ Primary and secondary target groups specifically-defined
- ✔ If required, a list of new needs for program partners
- ✔ Results of the initial diagnosis: target group profile, organizational factors, existing programs
- ✔ A visual representation of the above aspects (§ Appendix C)

STEP 3

Conceptual Framework and Intervention Evaluation Plan

STEP 3 | CONCEPTUAL FRAMEWORK AND INTERVENTION EVALUATION PLAN

Defining the conceptual framework and preparing the program evaluation plan are critical steps in program development and may take several months of work. It is important not to rush these tasks as they are the backbone of the project and necessary for its success and sustainability.

It is of utmost importance that the following two steps, the conceptual framework and intervention evaluation plan, be developed together. Project coordinators should review both sections before moving forward with the project.

STEP 3.A
CONCEPTUAL FRAMEWORK AND PROGRAM IMPLEMENTATION PLAN

CONCEPTUAL FRAMEWORK – PROGRAM LOGIC

Designing the **conceptual framework** of the nutrition and health program will allow the project take form in a concrete way. Throughout this step, the working group will define secondary, short-term objectives and the levers and tactics needed to achieve them. Mind mapping will then be used to reflect on sustainable, pertinent intervention actions.

Designing a conceptual framework is a way of reflecting on and illustrating the logic behind the program (target groups, focus points, objectives, means, etc.). It shows the logic behind the specific actions – which aspects will act upon which others. For example, according to the SMOC model (§ Appendix D), specific actions should influence the factors which influence the health determinants of the global problem. Formalizing the conceptual framework in a visual way helps to show the legitimacy of the program details and evaluation plan when communicating with partners or internal authorities of the initiating group.

Project coordinators should refer to the SMOC model (Appendix D) for the development of the conceptual framework. Adapted templates in Appendix C are also available. The SMOC conceptual framework is very useful to verify that the program is targeting each of the components of the socio-ecological model and to present a comprehensive view of the program. In Step 1 we used this model to show that environmental factors are of utmost importance to stimulate sustainable, long-term change.

The SMOC model will be used in this section to define which intermediary objectives need to be defined in order for the program to work toward the primary objective, and which specific levers can be used to stimulate change. What is the program going to do? What is the logic? How will it work? It is very important that all program

objectives be defined and regularly reviewed by the working group in order to assure constant program relevancy and a common understanding among working group members.

At a defined time, the program should be evaluated in order to understand whether or not the program has achieved its primary objective. However, several other aspects must be influenced in order to achieve this ultimate objective and evaluating these aspects throughout the program implementation will allow for earlier indications of the success of the program and will allow for program improvement.

The working group should use the conceptual framework of the program (§ template in Appendix C) before designing the Program Implementation Plan (PIP).

INTERMEDIARY OBJECTIVES

Decisions should be made as to the specific objectives that will be used to reach the primary objective of the program. These intermediary objectives should be defined for each of the program's focus points (§ *Choosing Program Focus Points*), keeping in mind the elements of the target group's ecosystem (environmental, social and individual factors). People working with the target group (for example, teachers, daycare workers, school directors, parents, etc.) should be involved in the reflections around the intermediary objectives of the program. They will help the working group define realistic, pertinent objectives. These people should be specifically chosen according to the population group targeted by the program.

Limiting the number of objectives, especially for the program's first phase, will make its evaluation easier and will clarify new directions for future phases of the program. The importance is that there be logic linking the elements at each level (the objective(s) chosen for level B must act upon those chosen for level C, etc.). It is not feasible, for example, to attempt to improve the health of a population (Level D) without also affecting the health determinants (Level C) and the factors influencing health determinants (Level B). Assuring a clear logic will allow for the definition of program objectives with clear, measurable short- or intermediate-term outcomes (§ *Step 2 Evaluation*).

Diagram 3 below shows an example of the conceptual framework (available in Appendix C as Template 5) including the program's intermediary objectives in line with the chosen program focus points.

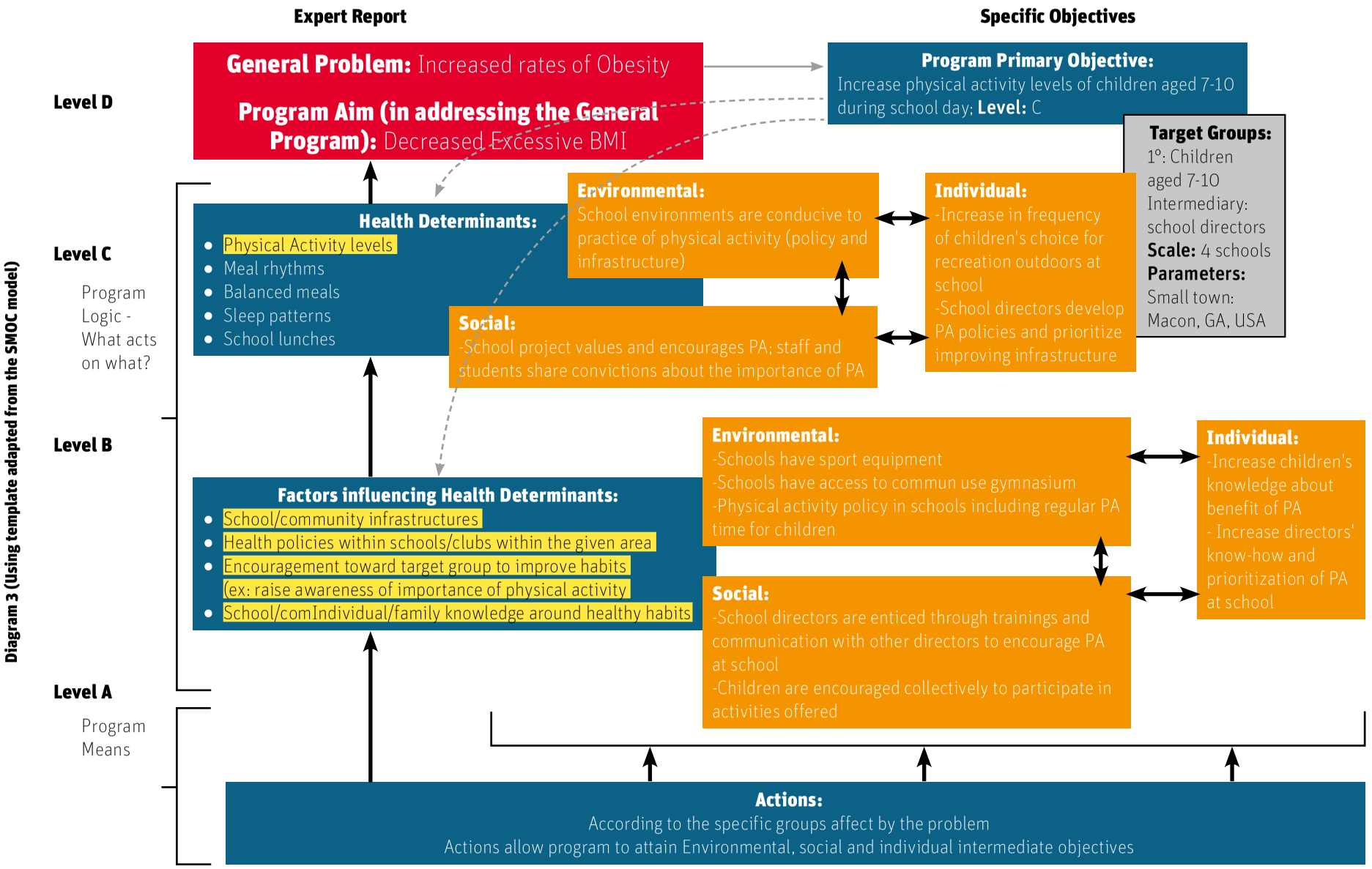


Diagram 3 (Using template adapted from the SMOC model)

Template 5 in Appendix C will help working groups visualize the logic behind each aspect of the program.

LEVERS FOR CHANGE AND PROGRAM ACTIONS

With a general problem and its contributing factors in mind (results of expert report and local context evaluation), and following the definition of the primary and intermediary program objectives, the working group should narrow the list of mind mapped **levers** (§ *Kick-off Meeting*). The list should consist of those which are coherent with the specific local context and population group targeted and which will address the defined focus points (and thus work toward program objectives).

Levers are the aspects that can be used to stimulate change and thus to achieve the program objectives. The specific actions of the program will use levers to stimulate change in the target group. ABECEDA (Appendix A), for example, teaches children how to make responsible choices about the balance between their food intake and their energy expenditure throughout the day. In this case, the children's knowledge on these aspects acts as a lever for positive change. Furthermore, in the case of a health and nutrition program, the levers should be linked to the contributing factors of the global problem discovered in the literature review and specific situation diagnosis. The ABECEDA working group may have decided to use education and information as levers for children because they knew that a lack of knowledge among the given target group was at the base of the global problem. Levers should be used on each level of the program and for each aspect of the target group ecosystem.

Although levers may be **mind mapped** during Step 1, they should be re-evaluated following the initial diagnosis (§ *Initial Diagnosis*). Identifying the objectives and specific target audience first will allow the working group to be sure that the chosen levers are pertinent to the specific targeted population. Once again, people from the field should contribute to the choice of levers.

INDICATORS

Indicators are measurable outcomes which will indicate the success of a program in meeting its objectives. They should be defined within the conceptual framework and should be linked with the program's intermediary objectives and corresponding actions.
The program indicators should be chosen simultaneously with the program objectives. It is important that there be measurable indicators throughout the implementation process in order for the evaluation of the program at any stage. If indicators are not defined, the program's actions will not be specific enough, nor will they be clearly related to the program objectives, making it difficult to measure whether or not the program is implemented in the way it was designed to, and whether or not it is working toward the primary objective.

The following are some questions that may be evaluated during the implementation of the program:

- Does the program correspond to the needs of the population?
- Does it correspond to the expectations of the population?
- Is it legible by the population?
- Does the program work in the way it was designed to?

Measuring the indicators of these aspects early may allow for quick changes and improvements to the impact and sustainability of the program. Working groups should refer to the four categories used in the SMOC model in order to define suitable indicators for the evaluation of a program's outcome.

Indicators at level D could be measures of health (BMI, physical fitness, nutrition levels, etc.), indicators at level C could be measures of changes in habits (food intake, frequency of physical activity, food choice, etc.) and on level B, indicators could measure increases in knowledge around health of the target population group.

FOCUS BOX III
PERTINENT PROGRAM ACTIONS: DESIGNING A NUTRITION AND HEALTH PROGRAM BASED ON SPECIFIC AND REAL NEEDS OF THE POPULATION GROUP

Further to the example used in chapter one of a nutrition and health program developed in France for year five classrooms in primary schools (based on hypothetical results of a linear programing study of data on French children), intermediary objectives and specific actions should be planned in order to work toward the primary objective (which is to increase by 20% the number of children presenting recommended intake levels of plant-based products and a proper balance of the dairy product category).

Corresponding intermediary objectives could include:

- Increased offer of plant-based products
- Decreased offer of cheese and increased offer of yogurt in canteens
- Increased correspondence with parents around canteen and home meal composition
- Key messages promoted in the environment of the school and encouraged by the school and canteen staff
- Children know how to balance foods within a given category.

Corresponding **actions** should be put in place around the above intermediary objectives.

On the environmental level, canteens should provide more plant-based products and lower energy-dense fresh dairy products for dessert. Cheese should not be served as a separate course if it is already included in the main or entrée.

On the social level, menus should be published for the parents to plan dinner meals accordingly and discussions/seminars should be organised with them to discuss and share ideas and learn about how to rebalance diets for an increase in plant-based products and an increase in low energy-dense dairy products (i.e. yogurt and milk). Proper plant-based and dairy product intake should be promoted at school-wide events and endorsed by school staff on a daily basis.

On the individual level, children should be informed through classroom activities as to the need for increased consumption of plant-based products and the proper balance between and low and high energy-dense dairy products. Concrete examples should be given as to how they can improve their consumption within the school and home environments.

PROGRAM IMPLEMENTATION PLAN

Once the logic of the program has been defined and objectives have been chosen with specific indicators and levers for change, the working group will be ready to organize the implementation plan. This includes its form and content and how the specific actions will be implemented. These details will be formalized in what we will call the **Program Implementation Plan** (PIP). The PIP will allow the working group to move from concepts to action.

DECIDING ON PROGRAM CONTENT

Program content refers to the key messages that promote the intended environmental, social and individual changes. If the program has an educating component, it is important that the key messages, recommendations, and general program content be discussed and created. This should be done before mind mapping specific program actions. The **expert panel** will be a great resource for the definition of the program's main themes, as well as for the definition of the specific recommendations and key messages in line with program objectives. If the creation of the program content is externalized, it must be approved by the expert panel before diffusion.

There are other ways to determine the program content. It can be completely new, or the program can use existing material which was developed for a comparable context and proven useful. Re-using program material may save time and resources, however the working group must make sure that the material is adapted to the new context. The time required to adapt and

interpret existing material and program content should not be neglected. For example, the Kit for Early Childhood Taste Education (§ Appendix A) was a new edition of an earlier program called "Kit Crèches", an ensemble of tools for pre-school catering services. Discussions with experts and working group meetings made it obvious that, in 2011, the target group with the greatest need was no longer day-care centres, rather it was in-home childcare professionals. This change in target group required new communication tactics, adapted program content (for example, simple, quick recipes instead of more complicated, elaborate ones), and a new format for the program.

Depending on the initiating structure, the program content, due to its scientific nature, must often be developed by a partnering institution or agency with the necessary expertise (in which case the structure in question should become an active partner of the program). The Danone Company programs studied in DINE held partnerships with non-profit organizations that provided scientific expertise for the creation and validation of the program content. These types of partnerships were shown to be extremely fruitful and appreciated by both parties.

The DINE project studied two Danone Corporate Social Responsibility Programs (CSR) (Bon Appétit Bouge ta Santé and ABECEDA, see Appendix A) which hold partnerships with the local Danone Institutes. Several other programs hold partnerships with other organizations specialized in education, nutrition or health, for the creation and scientific validation of the program content and educational approach. For example, Bon Appétit Bouge ta Santé has been successful due to the priority held to co-construction. The Club Européen des Diététiciens de l'Enfance (European Organization for Pediatric Dietitians) and the Société Belge de Pédiatrie (Belgian Pediatrics Society) played indispensable roles in creating the concepts and content of the program.

Following its scientific approval, any program content including key messages, slogans, logos, etc. should be pre-tested with the target group (see Step 4: *Pilot phase*) in order to ensure that the program is communicating to the target group in the most effective way.

In the focus box below, we will show how the results of a pre-program study (using the linear programing model) can be used for the definition of program content.

FOCUS BOX IV
PERTINENT PROGRAM CONTENT: DESIGNING A NUTRITION AND HEALTH PROGRAM BASED ON SPECIFIC AND REALISTIC NEEDS OF THE POPULATION GROUP

Our hypothetical health and nutrition program for French schools has a primary objective of increasing by 20% the number of children presenting recommended intake levels of plant-based products and a proper balance of the dairy product category. Key messages should be determined and used for program actions.

Messages for children should be a reference for increased plant-based product consumption and a healthy dairy product balance. For example, "more greens, more growth", "one handful of fruit and veg at every meal", "one yogurt a day", "have you had your one/five a day?", etc. Classroom lessons should teach children about why these dietary recommendations are important for health. Also, lessons should be given on the health consequences of insufficient consumption of plant-based products and excess high energy-dense dairy products. The program content should include concrete examples for classroom and canteen use about how the children can apply what they learn to real situations in their daily life.

Program content for parents and school staff could be around meal planning and the reasoning behind the necessary changes to food intake. The program content should include information about the health risks of insufficient plant-based product consumption and elevated high energy-dense dairy product intake. The scientific evidence behind the messages promoted by the program should also be included in simplified language. Finally, the program content should include examples and tips for real life situations developed by parents and school staff.

PROGRAM FORM

With specific levers in mind, and having decided on the content of the program, the working group must start thinking about the framework that the program will take. What will the program look like and what strategy will it use? How will its actions be put into place to stimulate the environmental and social changes required? Some options are policy implementation, policy evaluation tools and checklists, social media, lessons, one-shot interventions, etc. Will the program be stand-alone or will it be complimentary to another existing initiative (public campaign, for example)? This decision should be based on the resources of the project and the working group, but also on the needs and evidence-based effectiveness of specific strategies for the chosen target groups. The initial diagnosis (§ *Step 2 Evaluation*) should have researched other interventions and methods used for nutrition and health programs among the specific target groups.

Appendix A of this document gives concrete examples of Danone Institute and Danone Company health and nutrition programs which may serve as a reference for program working groups. Of the most common frameworks used are information sheets, games, lesson plans and magazines, although programs included in the more broad inventory of DI and Danone Company programs include: television series, DVDs, newspapers, one-shot interventions with guest experts, seminars, recipe books, etc.

Defining the program's framework will allow for an estimation of the work needed to develop the program material and implementation supports. Specific competencies may be needed and must be sought out if they don't already exist within the working group.

COMMUNICATION AND ACCESS TO TARGET GROUP

The PIP and program framework should include how the program will access its intermediary and primary target groups. This step can be a real challenge, especially when implementing programs in schools. The question that must be asked is: "In which way must we communicate in order for the target groups to accept the messages we would like to convey?". Also: "Are we legitimate in bringing these messages?". There are several ways in which the target groups can be reached, however the DINE study reveals that educators and parents prefer programs with an initial human contact and continued support throughout the implementation process. Thus, finding a way to make that contact possible should be a priority.

Personal contact can be made by the initiating group or by an external agency or organization partnering with the program. A team should be especially dedicated to initiating this contact and it should be maintained throughout the implementation of the program. Approaching the target group with the help of the program partners is very important. Partnering with credible organizations and scientific experts, which can be recognized by the target group, will ease access and increase the target group's trust in the program. When dealing with parents, for example, involving the association of parents will allow for easier access as the target group knows and trusts it. Including the program administrators in the development or implementation process is also favourable as, for successful program implementation, the administrator must take ownership of the project.

It is important to design a communication strategy that will assure the sustainability of the program. How will the information be presented and written up? The language used should be clear and simple and adapted to the ultimate target group. Pre-testing the messages and strategy is very important in order to ensure that the communication strategy used for the program material is adapted to the intermediary and primary target groups.

Furthermore, communication tactics should be chosen, such as the types of communication to be used to convey the messages. Which will be the tools? Venues, media, web 2.0, etc.? Table 2 in Appendix B presents a list of examples of communication tactics.

Choosing sustainable communication tactics is an extremely important step of this program implementation plan. With proper communication tactics, a program may build sustainability and live beyond the involvement of the working group. Electronic program material with the proper content, for example, can be made available online with little maintenance in the long term.

With clearly defined program content, framework and communication strategy, the working group should start mind mapping actions which could be put in place to work toward the program objectives on each intervention level.

MIND MAPPING SPECIFIC PROGRAM ACTIONS

With all working group members, the project coordinator should lead discussions and mind mapping sessions around specific actions which could be put in place to respond to the secondary and (indirectly) primary objectives and targets of the health and nutrition program (refer to the conceptual framework). The reflection around program actions and levers for change should have commenced during the construction of the conceptual framework. The specific actions of a health and nutrition program are found on level A of the SMOC guide. They are those concrete interventions which will allow the program to impact the target groups and reach its specific objectives. When deciding upon the program's specific actions, it is important to keep in mind actions which will stimulate environmental, social and individual changes for a global impact.

As much as possible, actors from the field should be included in the organization and implementation of the activities. The working group should be sensitive to these professionals and their daily work in the area of nutrition and health. Working in collaboration with them will increase the sustainability of the program.

The working group should narrow down the mind mapped ideas in order to choose a very limited number of actions which are most likely to stimulate change. The chosen actions must have indicators which are evaluable at any time throughout the course of the implementation. Working groups should add these actions to the conceptual framework (§ Appendix C, Template 5).

Once the specific actions of the program are chosen, they should be evaluated by the evaluation committee for their pertinence and potential for influence in respect to the target groups, levers and program objectives. It is important to keep the global budget in mind as the the production of program actions is costly. It is important to evaluate costs before making final decisions about program actions.

GUIDE FOR ADMINISTRATORS

With the content and form of the program actions and tools finalized, the program needs to be made useful and easy-to-implement for the professionals and/or families who will be putting it into action. For this, a very simple, precise guide should be developed for administrators.

Easy language should be used (avoid scientific terms) and the guide should be as short and precise as possible. The administrator should be encouraged to take hold of the program as their own project and implement it in the way they know most and which is closest to their own teaching style.

The administrator guide should include a plan for follow up with the working group during the program implementation along with a constant disposition of someone to answer questions or give more information upon request.

PROGRAM IMPLEMENTATION PLAN CHECKLIST

- ✔ Project objectives (primary and intermediary)
- ✔ Program actions with defined indicators)
- ✔ Timeline for the implementation and evaluation of the program (including phases and implementation periods)
- ✔ Program content (key messages, recommendations, slogans, etc.)
- ✔ Program Framework
- ✔ Communication strategy
- ✔ Specific actions
- ✔ Administrator's guide
- ✔ Total budget including evaluation

This formalised plan should include the above aspects in the form of a kit presenting the entire program.

DRAFTING THE BUDGET

The working group should evaluate the cost of the development and implementation of the program as well as its evaluation. A special cost analysis should be made for the pilot phase at which time the budget will be re-evaluated and adjusted according to the changes made to the program implementation.

CONCLUSION

The conceptual framework and program implementation plan show what the program will look like and how it will work in the context of the "ecosystem" of its participants. The next step will be to conduct a pilot test for the program in order to evaluate whether or not the program runs as it was designed to and if the corresponding material is relevant.

The conceptual framework and program implementation plan should have given an idea of what will be needed for its implementation. It is important that the working group re-evaluate the skills that will be necessary for the project. Are all of the competencies available within the working group or is there a need for an outside agency or additional partner?

Step 3.b. will lead working groups through the design of their program evaluation plan.

STEP 3.A CHECKLIST

The following elements should be formalized before moving on to Step 4 (Step 3.b. should be done simultaneously). The program coordinator should verify that each element is completed.

- ✔ Visual representation of the conceptual framework (include intermediary objectives, indicators, and levers for change)
- ✔ Program implementation plan including the following elements
  - Project objectives (primary and secondary), indicators and levers
  - Timeline for the implementation and evaluation of the program (including phases and implementation periods)
  - Program content (key messages, recommendations, slogans, etc.)
  - Program Framework
  - Communication tactics
  - Specific actions
  - Administrator's guide
  - Total budget including evaluation
- ✔ Re-evaluation of competencies needed

STEP 3.B: EVALUATION PLAN

The evaluation of any health and nutrition program should be kept in mind throughout the entire process of its development. In response to rising public health issues worldwide, health and nutrition programs are becoming very prevalent, whether in the school, the community or online, and are being developed by organizations, enterprises and other groups. Developing such programs allows these groups to contribute to a cause however, in many cases, the actual impact of the interventions is unknown. Unfortunately, the majority of health and nutrition programs are not evaluated.

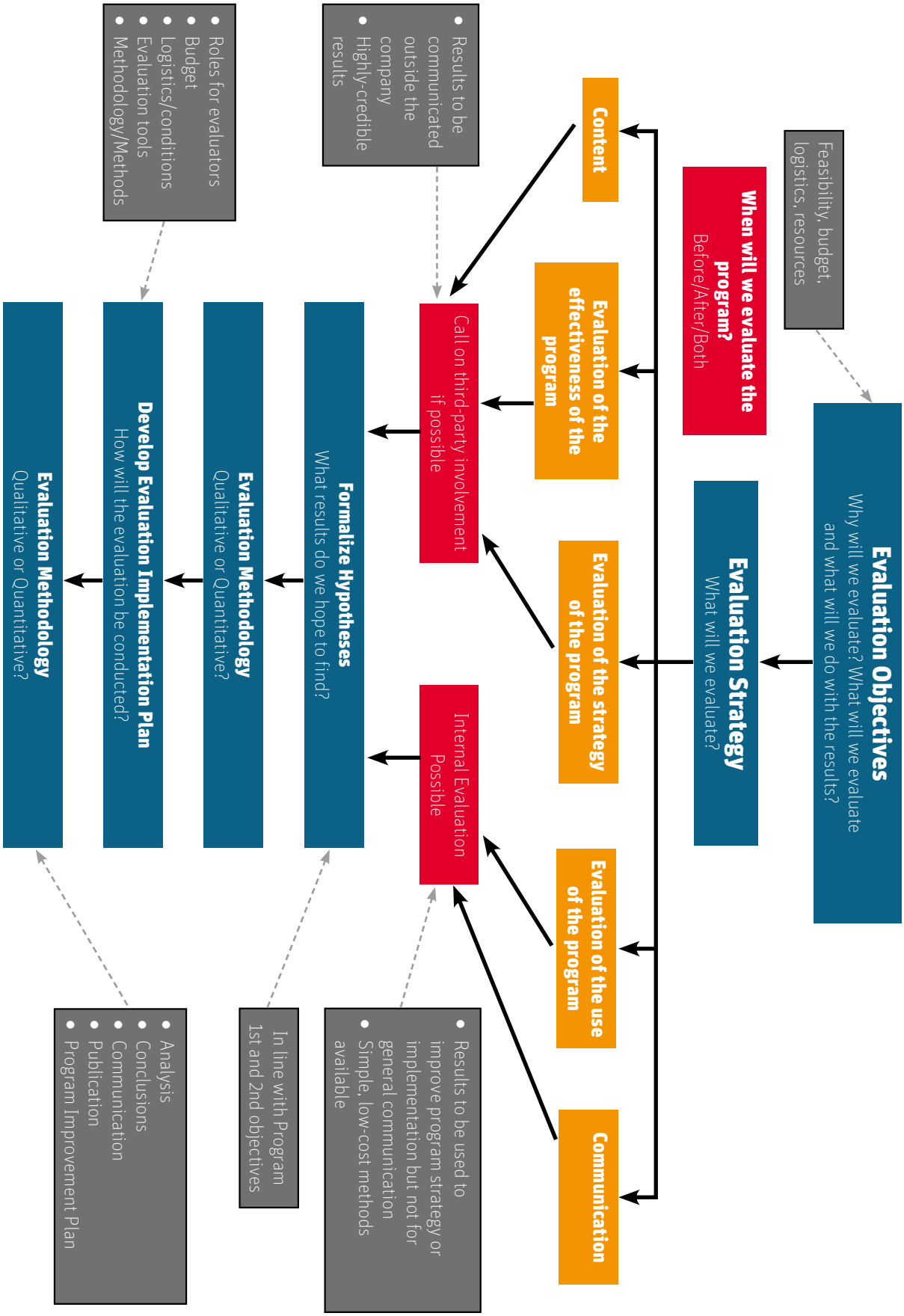
Designing and constructing the program evaluation plan should come very early in the program development process. Evaluating programs allow working groups to:

- Know how their tools are used
- Improve the program for the future
- Evaluate the efficiency of the intervention methods used
- Measure the objectives reached
- Know if the program was worth the time and money
- Avoid mistakes in the future
- ...

Any program evaluation should include the collection and analysis of specific information about important aspects of the program and its implementation. According to the expectations and planned use of the results, specific methods should be defined for the collection of this information. Strict measures should be used to collect accurate, non-biased data. Evaluation results should be published, if possible, in order for other groups to benefit from the experience.

Steps 3.a and 3.b should be followed simultaneously. The elements chosen for evaluation and the corresponding indicators should be directly linked with the objectives (primary and intermediary) and concrete actions that were defined in Step 2 and 3.a. Diagram 4 below indicates the steps involved in constructing an evaluation plan. This diagram exists in the form of a template (6) in Appendix C and may be used for the construction of the evaluation plan. The following sections will lead working groups through the steps involved in designing an evaluation plan coherent with the conceptual framework.

Diagram 4: Building an Evaluation Plan



Working groups should refer to this flow chart for the following steps of the design of the evaluation plan.

ENGAGEMENT OF THIRD-PARTY GROUP IN THE EVALUATION PROCESS

Depending on the type of evaluation conducted and the intended use of the results, involving a third-party group in the evaluation process may be preferred. Especially in the case of an evaluation of the efficacy of the program, where scientific expertise will be needed, an external group should be involved in order to produce credible, non-biased study results. This third-party group could be a university, research institute or company with the relevant skills and experience. It is important that the third-party group be significantly distanced from the program development. This will allow it to have an objective view of the program. The third party's expertise will be crucial when deciding on the evaluation model and methods used.

INTERNAL EVALUATION

In some cases, calling upon a third-party evaluation team is not feasible nor is it needed depending on the intended use of the results. If the priority is to evaluate the use or implementation of the program, the working group can go about putting this in place alone or with internal resources. This kind of evaluation will help determine if the program is being put in place as it is intended to be and if there are problems with its logic or material.

Internal evaluation studies can be made and will be useful for the improvement of the program material and implementation. Simple, low-cost methods are relatively easy to develop and put into place, especially when the program objectives and indicators are clearly defined (§ Steps 2 and 3a).

When budgetary or other reasons do not allow for an externalization of the evaluation process, the evaluation coordinator of the working group should gather a committee dedicated to managing the evaluation plan and implementation. This person should hold the relevant competencies in research, and should stay distanced from the program development.

PROGRAM EVALUABILITY ASSESSMENT

The subject of the program's evaluability should be discussed early in program evaluation planning. Leviton and colleagues discuss the importance of evaluability assessments for the improvement of public health programs and practices (Leviton, Khan, Rog, Dawkins and Cotton, 2010). Completing program evaluability assessments before implementing other sorts of evaluations can help ensure that the evaluation resources are used at the most appropriate time (JJEC, 2003). The evaluability assessment (EA) is a process which allows working groups to understand if the program evaluation is justified, feasible, and likely to provide useful information. It reveals, not only whether a program is ready for evaluation, but if it is likely to produce interesting information for the improvement of its actions and materials.

The evaluation committee should be in charge of the EA which should take place, for the first time, during the pilot phase. The committee should ask the following questions:

- Are there any program design issues?
- Are there any program implementation issues?

According to the EA model developed by the Juvenile Justice and Evaluation Center, there are five tasks to accomplish for the EA. They are to be adapted in terms of the specific program in question and should be explored by the evaluation committee and discussed by the entire working group.

1. Study the program history, design and operation;
2. Watch the program in action;
3. Determine the program's capacity for data collection, management and analysis
4. Assess the likelihood that the program will reach its goals and objectives; and
5. Show why an evaluation will or will not help the program and its stakeholders (JJEC, 2003)

Conclusions should be dawn as to the readiness of the program for evaluation.

EVALUATION OBJECTIVE(S)

In order for the evaluation of a health and nutrition program to serve its purpose, it should follow a plan including the objectives and expectations for the exploitation of the results. What will be done with the results and how will they be specifically used to improve the program or development process or to communicate about the initiative?

The objective is the basis upon which an evaluation plan should be built. It should specify which form of results will be sought, as well as their intended use, analysis and results. Mind mapping the following questions will guide working groups in the definition of the evaluation objectives.

- Why are we evaluating our program?
- What are we evaluating?
- For what purpose / operation?

EVALUATION STRATEGY – WHAT WILL WE EVALUATE?

Planning a concrete evaluation strategy is necessary for the definition of pertinent next steps for the program. Choosing the evaluation strategy to test a nutrition and health program is a very important step in the development stage and should be done simultaneously with the design of the conceptual framework and concrete actions for the program. It is imperative that the evaluation strategy be reviewed and validated by working group regularly and, if possible and desired, designed by a third-party group, according to the intended use for the results.

Several different aspects of an education program and its development may be evaluated. This book presents only a few of them and will categorize them into three groups. The first concerns the logic and process that the program follows, the second refers to the use and participation of the target group, and the third the impact or measurable change stimulated by the program. Below we will detail these three important evaluation strategies. Working groups are encouraged to consult a variety of resources and information on evaluation strategies in order to find a strategy which best suits their evaluation objectives, however it is most important is that the evaluation strategies be derived from the program's conceptual framework.

PROCESS EVALUATION

The evaluation of the process of the program refers to the evaluation of the resources, logic and actions put in place for the program. For example, Lemateki is a health and nutrition program developed by Danone Communities in Senegal that uses theatre to teach children about healthy eating and hygiene. In order to understand if the program actions (theatrical interventions in primary schools) were relevant, the Lemateki team called upon the Danone Institute International to evaluate the children's understanding of key messages in the presentation. The evaluation showed that the majority of health messages communicated through the theatre presentations were understood by the children, but that some were unclear. These process evaluation results allowed the working group to improve the material for subsequent implementation phases. The aim of process evaluation is to understand if the program and its actions are doing what is necessary to achieve the objectives. The following are some of the aspects of the program process which can be evaluated:

EVALUATION OF THE PROGRAM STRATEGY (CONCEPTUAL FRAMEWORK)

- Evaluation of the choice of program focus points
- Evaluation of the program's actions in relation to the defined objectives
- Evaluation of the logic of the program's approach

EVALUATION OF THE PROGRAM CONTENT

- Is the content of the program pertinent for the target groups?
- Is the content easily-comprehensible by the target group?
- Are the recommendations and/or messages of the program effective in impacting the target groups?

EVALUATION OF THE PROGRAM COMMUNICATION TACTICS

- Did the target groups receive the messages communicated to them?
- Did the program facilitators understand their role in the program?
- Was the means of approach to the target group effective and appropriate?
- Were the material and information presented by the program understood by the participants?

EVALUATION OF THE PROGRAM RESOURCES

- Did each member of the working group understand and fulfil their role? Were any roles missing or unneeded? Where the expert profiles pertinent and were there any scientific competencies missing?
- Do the program costs match up to the estimated budget?
- Were the chosen partners useful and pertinent for the program in terms of its image, the communication made around it and its development and implementation processes?

OUTCOME EVALUATION

The evaluation of the outcome of the program is the evaluation of what is produced by the activities. This could include, for example, the resources made available to the participants, the number of staff trained for the implementation of the program, the number of participants involved, or changes made to the participants' ecosystem. The Danone Institute in the Czech Republic has evaluated the number of schools that have implemented their kindergarten healthy methodology program, for example. They have studied which schools are likely to implement the program (private, public, large, small, etc.) and how many children and families have been involved. They have also trained several teachers for the implementation of the program and have evaluated the number of teachers as well as their motivations (or lack thereof) for participation.

This type of evaluation also looks into the preparation for environmental changes that the program has put in place (ex: healthy school policy and procedures). It allows working groups to understand how their program is being used and the success of its implementation. The following are specific aspects of the program outcomes which may be evaluated:

EVALUATION OF CHANGES TO POLICY AND PROCEDURES

- Does the policy encourage school environments which favour physical activity and healthy eating?
- Does the policy encourage the training and information of program administrators (teachers, directors, youth leaders, etc.)?
- Does the policy allow the children to be actors of their educational experience?
- Does the policy make available information to children and families about eating well?

EVALUATION OF THE USE OF THE PROGRAM

- Evaluation of time (time spent by participants)
- Number of users (participants)
- Number of participating schools/structures

IMPACT EVALUATION

Impact Evaluation is the evaluation of the changes stimulated by the program. It looks at the short and long-term results of the program in terms of its success in achieving the primary and intermediary objectives laid out in Steps 2 and 3 of this book. The impact of a program in achieving its objectives is often referred to as the program's effectiveness and efficiency.

EVALUATION OF PROGRAM EFFECTIVENESS

Effectiveness evaluations should be made regularly over the course of the implementation of the program and at several different intervals (for example, during the intervention, shortly after the intervention and several months after the intervention. Indicators of the primary objective should be tested at the end of the first phase (usually one or two years) only if previous evaluations have shown the program to function in the way it was designed to. Therefore, in the early stages of the program, the priority should be placed on evaluating the program's ability to accomplish the intermediary objectives.

It should be noted that influencing the global problem or achieving the program's primary objective may take years to achieve. Indicators of the intermediary objectives should be explored throughout the implementation process during all phases. They will allow the working group to understand if the program is working toward the primary objective as planned.

Some of the following questions should be asked when designing an effectiveness evaluation:

- A program has objectives, have we reached them? Are we able to validate our hypothesis?
- Can we observe an impact of the program?
- Improve nutrition/health knowledge of participants
- Change in behaviour of participants
- Change in health status of participants
- Change in environment (environmental factors)

FORMALIZING HYPOTHESES ACCORDING TO PROGRAM OBJECTIVES

In order to build the evaluation plan, reference should be made to the conceptual framework of the program. For each of the defined objectives of the program, indicators should be chosen which will allow for the measurement of the achievement of each. This is to say that indicators should be chosen for primary and intermediary objectives and other aspects of the program to be evaluated. The program intervention should be evaluated regularly throughout each phase of implementation. These objectives with their corresponding indicators should be used to formulate corresponding hypotheses. What are the results that the working group is hoping to find at the end of the evaluation process? What is sought to be influenced by the program and to

what extent? The hypotheses should follow the logic of the program (what will influence what?).

METHODOLOGY

The evaluation methodology is the type of evaluation that will be conducted. Quantitative studies produce statistics and very specific conclusions as to the evaluated aspects of the program. For example, evaluating a change in BMI or the number of hours spent by a specific population group in front of the television would be qualitative evaluations. These results should be generalizable for the entire population group. Methods used for quantitative evaluations are, for example, surveys, questionnaires, physical measurements, etc.

Qualitative studies on the other hand, are in-depth studies that evaluate a smaller sample group, allowing for more detailed results. Qualitative studies are often conducted in order to search for explanations to quantitative results of the same target group. Methods used for collecting qualitative data are, for example, observation, interviews, photography, videography, etc.

The evaluation tools (surveys, interview guides, etc.) should be tested on one or more group (as representative as possible of the whole) to learn how to improve the operation thereafter.

The methodology should also be chosen according to the objectives of the evaluation and the intended use of the results. The chosen methodology must be capable of producing the desired type of results.

FORMALIZING THE EVALUATION IMPLEMENTATION PLAN

The construction of an evaluation implementation plan should be formalized in the form of an accurate diagram clearly defining and tasks which correspond to each member of the evaluation committee.

EVALUATION IMPLEMENTATION

As part of the evaluation plan, a number of different aspects should be taken into consideration and planned in advance. For example:

- Which role does each member play in the evaluation of the implementation?
- What is the evaluation budget?
- What are the logistical conditions?
- What evaluation tools will be used (questionnaire, interview, observation ...) and what will be the evaluation approach (quantitative, qualitative)?
- What sample will be used for the evaluation of the program?

SAMPLE SELECTION

The selection of the sample group for evaluation is extremely important as it will determine whether or not the evaluation results will present the reality of the program implementation among the entire target group. There is no necessity for random sampling or representative groups however, to assure the accuracy of the impact evaluation results, comparative groups should be selected and studied. Assuring the comparability of the evaluation groups is more important than assuring that the samples be representative of all program participants. This will allow for a credible, accurate exploitation and communication of the results.

The same evaluation should be made on a sample group having participated in the program as well as on a comparable sample group not having participated. If testing a control group (no contact with the program) is not feasible, gathering data before and after a specified phase of the program implementation can also be done in order to compare the results of the same participants before and after intervention.

EVALUATION RESULTS AND PROGRAM IMPROVEMENT PLAN

Following the collection of data and information regarding the aspect(s) of the program chosen for evaluation, the evaluation committee should analyse and draw conclusions as per the objectives of the evaluation plan (the intended use for the results). According to the methodology and methods used for the evaluation, there are several different methods of analysis. Qualitative studies might use interview scripts for a lexical or thematical analyses, which will indicate the frequency and placement of specific words and/or themes during interviewees' discourses. These results can be compared with notes taken during the observations or other data collected (photos, video, etc.). On the other hand, quantitative data analyses call for much different techniques. Statistical analyses and comparisons often highlight qualitative results.

Finally, in the case of a program evaluation including qualitative and quantitative methodologies, a combination of analysis techniques may be used and results can be compared, contrasted or used to explain each other.

The information gathered about the program implementation and pertinence of content, material, actions and logic should be formalized into a plan for the improvement of the program and its implementation. A working group meeting should be dedicated especially to the presentation of these results by the evaluation committee (or external partner in charge of conducting the evaluation). From these results, the evaluation committee should suggest priorities for the program improvement, according to the pertinence of the strength or weakness to the program's ability to meet its objectives. The working group should decide upon which aspects to change and the work should be assigned to relevant members of the working group (unless a decision is made to externalize the optimization of the program). Template 7 in Appendix C can be used for the formalization of the program improvement plan.

STEP 3.A. EVALUATION

The evaluation committee and expert members of the working group should specifically review and evaluate the conceptual framework and evaluation plan together. These two elements of the program should have been elaborated simultaneously and should therefore correspond. For example, the plan for process evaluation plan should specifically evaluate the logic of the program as it is laid out in the program's conceptual framework. For impact evaluation, each intermediary objective should correspond with indicators to be measured as per the evaluation plan. Each of the program focus points, objectives and actions in the conceptual framework should correspond with elements of the evaluation plan.

CONCLUSION

Evaluating a health and nutrition program is a complex task and can take on many different forms. It is important to consider evaluating, not only the program efficiency, but also the way it was developed and its implementation in the given context.

The level of evaluation can be adapted to the resources of the program working group, however no program should be developed or implemented without an evaluation plan. As we have already discussed, programs that aren't evaluated dont have a guaranteed impact and have no way of constructing an improvement plan for future development.

Internal and external partners, as well as researchers and the general public, should have access to the program results, regardless of their nature. Any experience, positive or negative, will allow other groups to learn and will allow the initiating group to evaluate the value of their investment.

STEP 4

Organizing a Pilot Phase and Program Implementation

STEP 4 | ORGANIZING A PILOT PHASE AND PROGRAM IMPLEMENTATION

A pilot phase is an extremely important step in the life of a health and nutrition program. During this step, the program will be implemented and generally evaluated on a very small scale before the first real phase of the program implementation. A test phase prior to implementation is indispensable as it will allow the working group to understand the realities of the program in action and its strengths and weaknesses. Program materials, tactics and strategy can be tested to allow for any final adaptations or improvements to be made before implementing the first phase of the program.

The evaluation committee has a very important role to play in this phase of the program development and formalizing the research protocol with the expert panel or other researchers is recommended. The committee should be composed of people outside of the program development in order to allow for an objective critique and evaluation of the program. The pilot phase should be used for the evaluation of some or all of the following aspects of the program: impact (only if time permits), target groups' ability to understand materials, program implementation, communication tactics, and program content and program logic. The evaluation of this small-scale implementation of the program will indicate whether or not the program was implemented as intended and which changes should be made to specific aspects of the program. The conclusions will allow for an optimization of the program before its full implementation.

Below we will outline the steps involved in conducting the pilot study.

DEFINE OBJECTIVES FOR THE PILOT PHASE

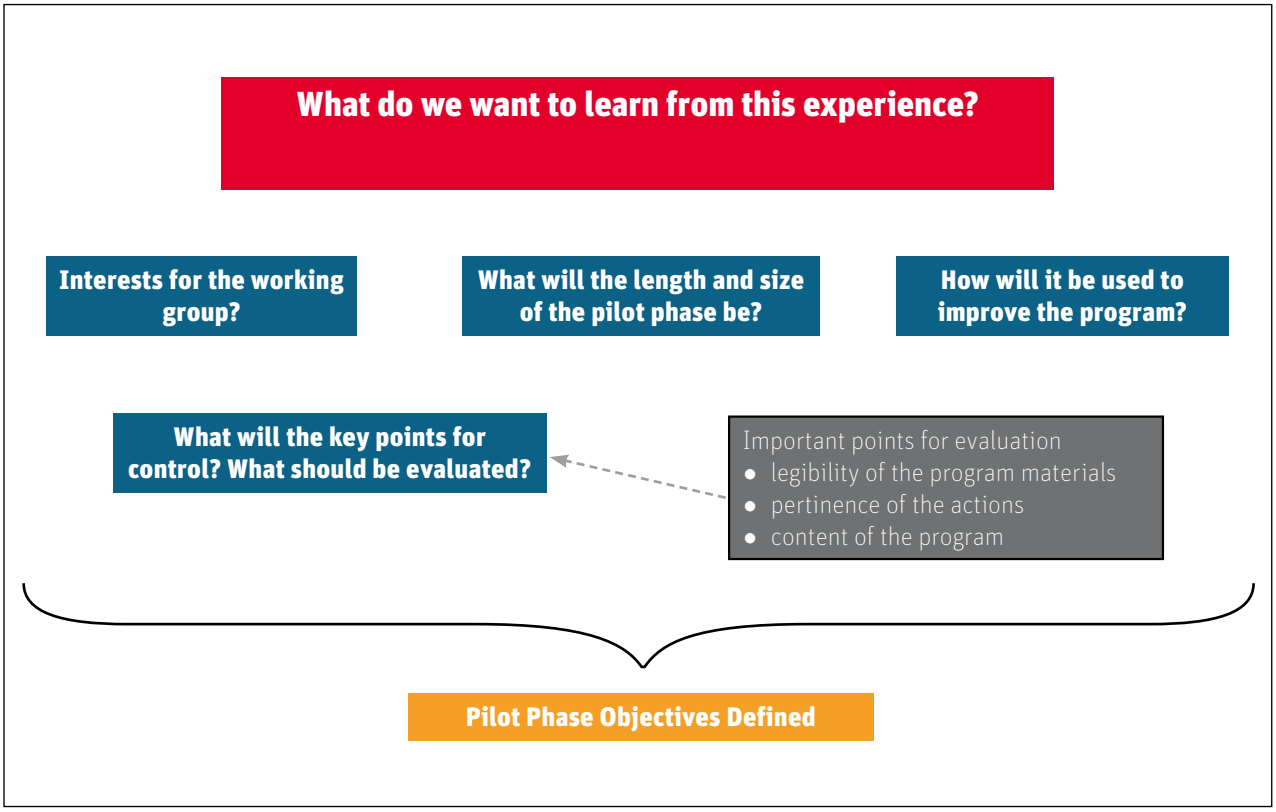
Before organizing or implementing the pilot phase of program, the working group must be clear about what they are hoping to learn from the experience. What is the interest for them, for which specific reasons will the pilot phase be conducted? What will be the key points of study? Formalizing these expectations in the form of reasonable objectives will allow for the feedback from the evaluation to be useful for the improvement of the program before full implementation.

It is important to keep in mind what is feasible to be evaluated during the pilot phase, and which results are reasonable to expect. The possibilities for evaluation will depend directly on the size and length of the pilot study. The working group should be modest in defining objectives and it should not expect to evaluate all aspects of the program. Choices must be made about the specific aspects of the pilot which will be specifically and thoroughly evaluated. This decision should be made by the working group based on the priorities it has, but the most crucial parts of the program to evaluate during the pilot phase are the legibility of the program materials and the pertinence of the actions and content of the program for the specific target group. Evaluating the effectiveness or impact of the program requires a very lengthy pilot phase.

When deciding on the objectives for a pilot study, the working group must think about how the feedback will be useful following the study. There are two main uses for study results: program improvement and communication. These will be developed later in this chapter.

Diagram 5 below shows the elements that should be taken into consideration when defining the pilot phase. This diagram exists in the form of a template (6) in Appendix C.

Diagram 5: Defining Pilot Phase Objectives



SAMPLE SELECTION

The population chosen for the pilot study should be as representative as possible of the full implementation population and subjects should have as many common characteristics as possible. In order for the pilot phase to accurately evaluate the pertinence of the program actions, material and content for the target groups, the pilot sample must be representative of program participants.

The size of the sample group will depend on the size of the overall program. The aim, however, is for the working group to design a small-scale implementation that will be easy to follow and evaluate with accuracy. If the sample group is too large, details about the problems encountered may be hard to understand and the working group risks widely diffusing a program that hasn't been thoroughly tested and perfected.

Calculating the size of the pilot study will depend on the overall program and the objectives for the pilot phase however if, for example, the program is to developed in twenty schools, conducting a pilot phase in one or two schools with similar profiles would be sufficient. If a program is to be implemented on a larger scale, a larger sample group is needed.

LENGTH OF THE PILOT STUDY

The length of the pilot study should also be related to the length of the first implementation phase (the first phase should usually be around one year in length). A pilot phase should last at least one quarter of that time, but can last up to the full length of the implementation phase (allowing more results as to the efficiency of the program). Deciding on the length of the pilot study should be done by the evaluation committee of the working group according to the objectives of the pilot phase and the feedback expected.

PILOT STUDY TIMING

Choosing the correct timing for the pilot study is crucial for its proper implementation and in order to assure results which accurately reflect the program. The timing can have a great influence on the outcome of the evaluation and may produce incorrect conclusions. For example, if the pilot phase of the program is conducted around a holiday or long weekend, the children's eating habits may be different than usual, meaning that the program may have a different impact than it would at another time of the year.

DEVELOPMENT OF EVALUATION MATERIALS

Just as the pilot study is an opportunity for the working group to test the program implementation (activities, content, material, etc.), it is also an opportunity for the evaluation committee to test the program evaluation tools. Depending on the evaluation plan of the program defined in Step 3.b. (including objectives, expectations, etc.), tools should be used for data collection and the evaluation of various aspects of the program.

As discussed above, it is not always feasible to evaluate the primary objective of a program during the pilot phase, however those tools that will be used during the implementation evaluation should be tested during the pilot phase in any case. These materials will be used to evaluate the objectives for the pilot study which will allow for their improvement and reuse during the implementation evaluation in the first phase of the program.

The objectives for the pilot phase may require the development of other material for its specific evaluation. As discussed above, it is especially important that the legibility and pertinence of the program material and content be evaluated, along with the actions used to reach program objectives. If this is the case, working groups can use the concepts outlined in Step 3.b. to design tools that will be used during the pilot study.

Once the evaluation material is finalized, it should be crosschecked against the pilot phase objectives to assure that it will produce the expected results. The evaluation committee must keep in mind the constraints and bias that can arise in the program implementation and pilot phase evaluations. The length, specific targets and program objectives should be taken into consideration for the development of the evaluation materials.

ADMINISTRATORS' GUIDE

The working group should verify that the administrators' guide is specifically adapted to the program administrators involved in the pilot study. Special feedback from administrators should be sought.

PRODUCTION OF PROGRAM MATERIAL

Once the working group has chosen the specific actions, the program content should be used to develop the material for the program implementation. Depending on the program's actions and chosen communication tactics, the material may take on several different forms. For example, the DINE project studied programs that use materials in the form of magazines, brochures, games, online forums, pedagogical guides, lesson plans, activity or tips sheets, etc. These materials should be used as tools for communication of the program content (recommendations and key messages) as defined in Step 3.a.

The material should be produced and tested during the pilot phase. It is important that this pre-test be evaluated in order to assure that it is correctly adapted to the target group and useful in the fulfilment of the program objectives. The material should remain simple and coherent (graphically, but also concerning program messages and recommendations) and should be constantly reviewed by the working group. As the contexts of the program evolve as well as the expectations of parents, children and health and education professionals, the program material needs to maintain relevant.

Unless the initiating group or working group members have the creative competencies needed, the design of these materials should be contracted out to a communication agency or free-lance artist. That being said, the working group must prepare a very specific brief of the concepts behind the material needed and must closely follow the development process. Included in the brief should be the specific target group profile, parameters and scale of the program. The agency should be able to recommend specific tactics for effective communication to the target group through the program material.

The accuracy of the representation of program messages and recommendations is very important. Any recommendations of the program should be in line with any governmental or national recommendations and all materials should be carefully reviewed several times by the working group members and validated for their scientific content by the scientific experts. Before finalization, the program material should also be shown to the program owner and internal authorities of the initiating group as they should give the very last opinion before production.

The final material should be produced in sample form for quality control by the working group prior to full production.

PUBLICIZING THE PROGRAM

Communicating to the public about the program is very important for wide awareness of the initiative and to involve a maximum number of role-players in the ecosystem of the child. This is key to making people aware of the program and ensuring it is used as widely as possible within the target group. The program can be publicized by the use of flyers, diffusion by partnering organizations, newsletters, e-seminars, media, press packs, etc. Making the program known to key stakeholders may encourage their collaboration for future phases of the program. Before the pilot study, if it hasn't already been done, obtaining partnerships with governmental health promotion programs or campaigns is useful for the visibility of the program.

LAUNCHING THE PROGRAM UNDER CAREFUL CONTROL

The pilot phase should be launched exactly as it is designed to be launched in the first phase of the program. An implementation protocol should be determined for the program's first phase evaluation and should be tested during the pilot phase. Following a program evaluability assessment (§ Step 3.b.), the evaluation should also be implemented, as it will in the first phase of the program. Process evaluation should be especially emphasized in the pilot phase. A formal, credible evaluation of the pilot phase is indispensable for the definition of clear next steps and communication leavers.

It is important that the pilot phase resemble the actual program implementation as much as possible although it must be put in place under very careful control. This control will assure the quality and accuracy of the pilot evaluation and will allow careful observation of strengths and weaknesses. According to the objectives of the pilot phase, key points of control should be defined and evaluated throughout e.g.: length of lessons, relevance of material content, etc.

Maintaining careful control and observation of this implementation is extremely important, however the evaluation and collection of data should be conducted as they would be in the first phase of the program and any additional attention should be kept discrete. This is to limit bias which may affect the results of the evaluation due to reactions of the target groups toward a feeling of control or analysis.

FOLLOWING THE PILOT STUDY

The time after the pilot study should be dedicated to the improvement of the program actions and materials and the exploitation of the study results. Having tested the feasibility of the program, the tools should be fine-tuned in accordance with the program in reality.

DEFINE CHANGES/IMPROVEMENTS FOR THE PROGRAM

Following the analysis of data collected during the pilot phase, specific conclusions should be drawn according to its objectives. The information gathered about the program implementation and pertinence of content, material, actions and logic should be formalized into a plan for the improvement of the program and its implementation process. A working group meeting should be especially dedicated to the presentation of these results by the evaluation committee (or external partner in charge of conducting the evaluation). From these results, the evaluation committee should suggest priorities for program improvement, according to the pertinence of the strength or weakness with the program's ability to meet its objectives. The working group should decide upon which aspects to improve and the work should be assigned to relevant members.

It is important that the working group spend time with the evaluation committee in order to formalize a program improvement plan with step-by-step changes to be made and to visualize those aspects according to their importance and the time, effort and resources necessary for their improvement. Changing target groups, for example, may require that the working group go back to the tasks in Step 2 (initial diagnosis, etc.), whereas changing the colour scheme of a brochure may only require a phone call to the graphic artist. Each task should be prioritized and assigned to relevant working group members.

The program material should be specifically discussed and improved according to the results of the study. The material used for education and communication purposes is extremely important for the proper transmission of program messages and key environmental changes and thus should be very clear to participants.

ELAC (Appendix A) completed a thorough pilot study before the first phase of the program implementation. For the pilot phase of ELAC, the teaching materials were presented to schoolteachers in a large folder with information on nutrition and lesson plans. The pilot phase showed that the teachers found this folder cumbersome and difficult for them to transport and manage. Before the first phase implementation, the folder was improved and the lesson plans were incorporated into the teachers' guide (rather than as lose sheets in the large folder). This made it easier for the teachers to access and transport the material. The program was also evaluated after the program's first phase and as a result of this evaluation, the teachers' guide was reorganised for all lesson plans to be near the front of the book where teachers could find them quickly. General information about healthy eating that had been at the front of the book was moved to the back as reference material. This reorganisation helped engage the teachers.

The template 7 in Appendix C can be used as a guideline toward the formalization of the program improvement plan.

EXPLOITATION AND COMMUNICATION OF PILOT STUDY RESULTS

In addition to the improvement of the program, the pilot study results should be communicated to stakeholders and program partners, as well as internally within the initiating structure. A press release should be made before the launch of the first phase of the program and should focus on the results of the pilot phase and the program's potential for success in the given context.

Positive pilot study results should be used to convince actors and stakeholders of the pertinence of the program and the importance of its implementation. They can be used to convince institutions to participate in and endorse the program and can give credibility to the actions. Parents and educational professionals are more likely to adhere to a program with proven benefits for the environmental, social and/or individual aspects of the participants ecosystem.

Pilot study results should be shared with the scientific community in order to improve the development of future initiatives. Negative results can also be used to show the constraints and limits that exist when designing and implementing such a project.

Regardless the outcomes of the pilot study, the results should be published and made available to the scientific community and to the general public.

CONCLUSION

At this point the program has been pre-tested, improved, and implemented in its full form however this is only the beginning. The working group must keep in mind that a health and nutrition program which is implemented must be followed and must be thoroughly and constantly evaluated. The communication around the program and its results is also an important task for the working group to prioritize internally and with partners and stakeholders. This communication during the first phase of the program may lead to new opportunities and support for the future expansion or improvement of the program.

STEP 4 CHECKLIST

The following elements should be formalized before moving to Step 5.
The program coordinator should verify that each element be completed.

- ✔ Visual representation of the pilot phase objectives and points of control
- ✔ Plan and material for the implementation phase:
  - Sample (size and profile)
  - Pilot phase length
  - Evaluation materials
  - Administrator's guide
  - Program material
  - Exploitation of results: communication and program improvement
- ✔ Program improvement plan and assigned roles within working group
- ✔ Implementation follow-up plan

STEP 5

Phase 1 Implementation

STEP 5 | PHASE 1 IMPLEMENTATION

Following the program optimization according to the program improvement plan, the health and nutrition program will be ready to be implemented in its first phase of action. Working groups should always keep in mind that the evaluation process is continuous and should accompany the implementation of the program at all stages. This chapter will give some recommendations as to how to make a program run on a day-to-day basis and how to prepare it to be sustainable.

PROGRAM KICK-OFF EVENTS

Following the finalization of the program improvements (material, actions, etc.), the working group should organize a kick-off event with its partners in order to make the program known and motivate participants. For example, a community activity could be organized for school families with the collaboration of local associations or governmental organizations. It could raise awareness around healthy habits and could inform parents about the actions that the program is taking in order to create change.

Kick-off events can also be organized within schools or other structures in order to make the program known and stimulate the interest of the children.

To reach the media, the working group should organize a press conference prior to the program implementation in order to raise awareness among partners and stakeholders. The press conference also gives the working group an opportunity to communicate about the pilot study results and stimulate an interest for the program among potential partners.

IMPLEMENTATION FOLLOW-UP AND ACCOMPANIMENT

Throughout the implementation process, and especially in the beginning, the program administrators should be accompanied in their role of putting in place the program actions on the environmental and social levels. Working group members should be in contact with these actors in order to answer questions and clarify program content if needed. If this contact is not feasible for the working group members, it should be assured by a third party agency or organization. In the case of ELAC, for example, a communications agency is specifically in charge of communicating to the school teachers about the program and encouraging them to take part. On the other hand, in the case of the Kit for Early Childhood Taste Education (DI France), the contact with the preschool workers was made with the help of a governmental organization which works with childcare workers.

Being present in the implementation phase is very important to assure that the administrators don't encounter difficulties or blockages in the administration process, but also to assure the proper use of the materials. Without a follow-up process, the working group is unable to know if the material is being utilized.

Finally, assuring a good and constant contact with the program administrators will allow for easier access to the field for data collection and program evaluation. Finding structures that accept to take part in the process of evaluation is not easy althought it can be simplified if good relations already exist with the working group.

IMPLEMENTING THE PROGRAM EVALUATION

The evaluation committee should assure the follow-up of the program and its evaluation according to the defined plan in Step 3.b. Following the program throughout its implementation is extremely important, as issues will surely arise.

The evaluation committee (whether internal or external) should regularly collect data in the field, however the working group members (coordinators, partners, scientific experts) should also observe the program in action in order to understand what it looks like in reality.

Regular meetings should be organized by the evaluation committee with the working group in order to discuss the program's outcomes and make necessary changes to the objectives or program implementation plan.

CONCLUSIONS

Launching the first phase of the program implementation is a huge step. Having carefully designed the program and implemented the pilot study, most major issues should be avoided however working groups should be readily available for quick resolution in the case of unexpected problems.

Program administrators should be closely accompanied, especially during the program launch, and contact should be made with them to follow up on the program launch and their early experience/perceptions.

The evaluation committee should also ensure the proper implementation of data collection and other evaluation needs according to the plan.

STEP 5 CHECKLIST

The following elements should be formalized during the first implementation of the program. The program coordinator should verify that each element be completed.

- ✔ Program kick-off events organized for:
  - General Public
  - Medias
  - Stakeholders
  - Partners
  - Local organizations and governmental structures
- ✔ Program follow-up and accompaniment plan
- ✔ Evaluation implementation

STEP 6

Follow-up Reports and Program Closure

STEP 6 | FOLLOW-UP REPORTS AND PROGRAM CLOSURE

Drawing up reports at the end of each phase of the program implementation, as well as at the closure of the program, is very important for communication with partners, stakeholders, scientific communities and the general public. This will not only raise awareness about the initiative, but it will also provide information for the improvement of existing or new nutrition and health programs.

Reporting should also be used as a means for the working group to look back on the process and formalize the strengths and weaknesses of the program and of the process of development. It is a good opportunity to thank the partners and anyone involved in the program development.

FOLLOW-UP REPORTS

After each phase of the program implementation, it is important that the working group follow-up with a report to be diffused to everyone involved in the program development, the stakeholders and to the general public.

The process of preparing this document will allow the working group to look back on the entire process of the program development and will allow them to see the results of the time, effort and money invested. These follow-up reports are essential for leaving a trace of the actions and their corresponding outcomes.

PROGRAM SUMMARY

These reports should briefly summarize all aspects of the program (development, objectives, target groups, actions, working group members, materials, etc.) followed by a discussion of the strengths and weaknesses of each and concrete ways in which they may be improved. Their purpose should be:

- To formalize of the results of the evaluation
- To summarize the working group's recommendations for subsequent phases of the program
- To be used as a means for general communication about the entire initiative

PROGRAM OUTCOMES

These reports should conclude on how the implementation turned out within the given environment and if and how it addressed the original global problem. Did the levers chosen and specific program actions allow the program to achieve its objectives? Did the chosen levers provoke change? Were the indicators easy to measure and indicative of the outcome of the problem in relation to its objectives? These reports should also show which objectives weren't met and the possible explanations of why these results were found.

Concerning the program material, communication and specific actions, were they catered to the specific target groups? Were they easily legible by

the program target groups? Which aspects could be improved and how can they be better adapted to the population group?

The economics of the program should also be presented in each follow-up report and should show the cost-effectiveness of each specific implementation phase. Evaluating the costs and concluding upon cost efficiency are important to include in the report. How will the cost-efficiency of the program be improved for future implementation phases?

NEXT STEPS AND PROGRAM ADAPTATION

The working group, including the evaluation committee, should formalize recommendations for the future of the program. Should it continue? In which ways should it be changed? Is the program worth expanding? In this part of the report, the working group can reflect on new directions for the program, such as changing the parameters or target groups and adjusting the objectives. What is the transferability of the program?

Furthermore, the working group should evaluate the changes that should be made to the program in order for it to continue to be relevant and pertinent for the given group. Environments are constantly changing and so are the habits and interests of individuals. These changes require regular adaptations of program objectives, material and activities.

PHASE TWO IMPLEMENTATION: SCALING UP A PROGRAM

After the first implementation phase, the program needs to continue into its second phases including the improvements required following the evaluation results. Often, depending on the resources, the program may be ready for an upscale for the second phase of its implementation.

Scaling up a program requires reflections around the objectives, targets and content for the program. The working group should refer back to the first steps of the development process in order to increase the program to include participants with the same needs and requirements. On the other hand, if the working group decides to change the target group or add to the existing ones, the program material, methods and content should be adapted accordingly.

Any changes to the program, including for scaling up, must be made with the validation of the expert panel of the working group.

FINAL REPORT

Health and nutrition programs may end for several different reasons. The global problem may no longer exist or the specific target groups may no longer be affected by it. Perhaps the program no longer falls within the priorities of the initiating group or maybe the program partners or working group members are no longer willing to invest in the project. Regardless of the reason for the end of a health and nutrition program, drawing up a final report is a very important step of the program development.

This final report should target internal and external partners, policy-makers, stakeholders, researchers, health and education professionals and the general public. It will be a formal way to thank and give feedback to those who have contributed to the program, and raise awareness among others. The final report should be available regardless of the program's success as it will inform future initiatives of the experience and lessons learned.

The report should be tangible and easy-to-read in order for it to be a useful resource. It should be well structured around four main aspects of the program: its development, the conceptual framework and evaluation plan, the evaluation results, and the conclusions and main recommendations of the working group (initiating group, expert panel, partners, field workers, etc.). Several of the visual diagrams and documents which were used in the development of the program will be useful to include in this final report.

PROGRAM DEVELOPMENT

This part of the report should describe the steps followed for the development of the program including the roles and involvement of each partner and working group member. This section should describe the research conducted and the process leading up to the design of the conceptual framework. It is important to include how the program was evaluated and improved and/or modified at each phase.

CONCEPTUAL FRAMEWORK AND EVALUATION PLAN

The final report should include a description of the program strategy and the logic behind each aspect of it (objectives, content, target groups, levers for change, and activities). Along with each element should be the corresponding component of the evaluation plan. It is important that the report show that the conceptual framework was designed simultaneously with the evaluation plan.

This section of the report should go as far as describing the program in its form including the evaluation plan. What did the program look like? Which aspects were evaluated and how was the evaluation conducted? The report should describe the actions, materials and program content (key messages and recommendations), as well as the logic behind each. Details should also be given about the evaluation of each aspect of the program including the strategy and tools used.

EVALUATION RESULTS

This part of the report should give details about the outcomes of the program in its different phases and their meaning for the efficiency of the program strategy. The results from each phase should already be formalized in the follow-up reports and the final results of the program should be formalized and presented here with general conclusions as to the efficiency of the program and its ability to reach its defined objectives.

This section should also discuss the strengths and weaknesses of the program logic, evaluation plan and implementation in order to draw conclusions about the lessons learned and recommendations for further initiatives. Did the logic of the program check out? Was it pertinent for the specific target group? Did it respond to the global problem and specific needs defined in Step 1?

CONCLUSIONS AND SUBSEQUENT RESEARCH QUESTIONS

Beyond exposing the logic and results of the program, the final report should draw general conclusions about the efficiency and overall success of the program. The general strengths and weaknesses of the program development, implementation and evaluation processes should be discussed.

Furthermore, the working group should reflect on the lessons learned as to the access and impact on target groups. The outcomes and results of the program should be used to define pertinent research questions for future projects linked to nutrition and health programs.

CONCLUSION

When a program is changing directions or ending its activities, the working group should make mind maps around the ways for the materials to be made available and/or reused within the initiating group or externally (by other organizations or the general public). Making the material of the program available online for re-use by other groups, for example, may provide ideas for other initiatives or an adaptation and re-use of them it in another context.

STEP 6 CHECKLIST

The following elements should be formalized for the end of each implementation phase or to close the program.
The program coordinator should verify that each element be completed.

- ✔ Follow-up report after each phase including program description, evaluation results and program improvement plan
  - Program Summary
  - Program Outcome
  - Next Steps
- ✔ Program final report
  - Program development
  - Conceptual framework and evaluation plan
  - Evaluation results
  - Conclusions and subsequent research questions concerning nutrition education
- ✔ Acknowledgments and thank you to program partners and working group members
- ✔ Plan for making program material available online or within the initiating group

CLOSING REMARKS, GLOSSARY AND REFERENCES

CLOSING REMARKS

This guide was written with the collaboration of Danone Institute scientific members and contacts and was based on the results of the DINE project that studied nutrition and health programs worldwide. Our aim was to use our long experience in nutrition and health program development to develop a methodology and create a practical tool to be used by project coordinators or working group members involved in the development of programs.

Nutrition and health programs should be evidence-based, practice-based and adaptable in order to increase their chance of success. They should be developed by multi-disciplinary teams of professionals and scientists should be created with specific aims and objectives. Target groups should be researched in order for programs to address specific issues existing within a given context.

Furthermore, it is important to learn from past experiences in nutrition and health. This is why the Danone Institute International conducted an in-depth study of previous and existing programs worldwide in order to contribute to the knowledge around program development, implementation and evaluation.

This document has organised the DINE study results into a methodology including six steps toward the creation of nutrition and health programs. It uses concrete examples from programs included in the study and templates and working documents are also included. We hope that this guide is a valuable reference to project coordinators and that it will lead to objective-driven programs with evaluated outcomes.

The Danone Institute International would like to sincerely thank the participants of the DINE project and the working groups of each program studied. Thank you for sharing your unique experiences and expertise. We would also like to thank the review committee for several dedicated revisions of this document. Finally, we would like to sincerely thank each invaluable member of the scientific committee who worked hand-in-hand on the development of this guide.

GLOSSARY

Conceptual Framework	Visual illustration of how the program will work to achieve objectives (see also Program Logic)
Creative Brief	A document summarizing the project in early stages; used to present the project to potential partners.
CSR	Corporate Social Responsibility Program
DII	Danone Institute International
DINE	Danone Institutes developping health and Nutrition Education programs
Evaluation Coordinator	Member of the working group in charge of the evaluation of the program.
Expert Panel	Group of specialized scientists involved in developing the program
Focus Point	Aspects which are most logical and feasible to address
Global Problem	Health issue to be addressed by the program
HPS	Health Promotion Switzerland
Indicator	Measurable outcomes of the program which will indicate the success of a program in meeting its objectives
Initiating group	Organisation or company responsible for the development of the program
Intermediary indicator	Measurable outcomes of the program during its implementation phase which will indicate the success of a program in functioning in the way it was designed and working toward its objectives
Intermediary target group	Population groups targeted in order to stimulate change among the primary target group.
Lever	Mean to stimulate change

Logic Model	The way a program works to achieve objectives (see also Conceptual Framework)
Mind map	Creative reflexion around specific topics illustrated in an abstract form.
Partner	Any person (expert, target group member, etc.), institution, company, organization, etc. whose role is to co-construct the education program with the initiating group.
PIP	Program Implementation Program – defined plan for the improvement of the program following a pilot phase or evaluation
Primary objective	The ultimate outcome desired by the working group
Primary Target Group	Clearly-defined population group ultimately targeted by the program
Program Content	Key messages at the foundation of the intended environmental, social and individual changes of the program
Program Focus Point	Those health determinants of the global problem and factors influencing the health determinants (environmental, social and individual levels) that the program will address
Project coordinator	Individual responsible for leading the working group through the program development
Secondary objective	Intermediary program goals which will allow the program to work toward its primary objective
Ultimate indicator	The measurable outcome of the program which will indicate the success of a program in meeting its primary objective
Working group	Team of individuals working together to develop the program

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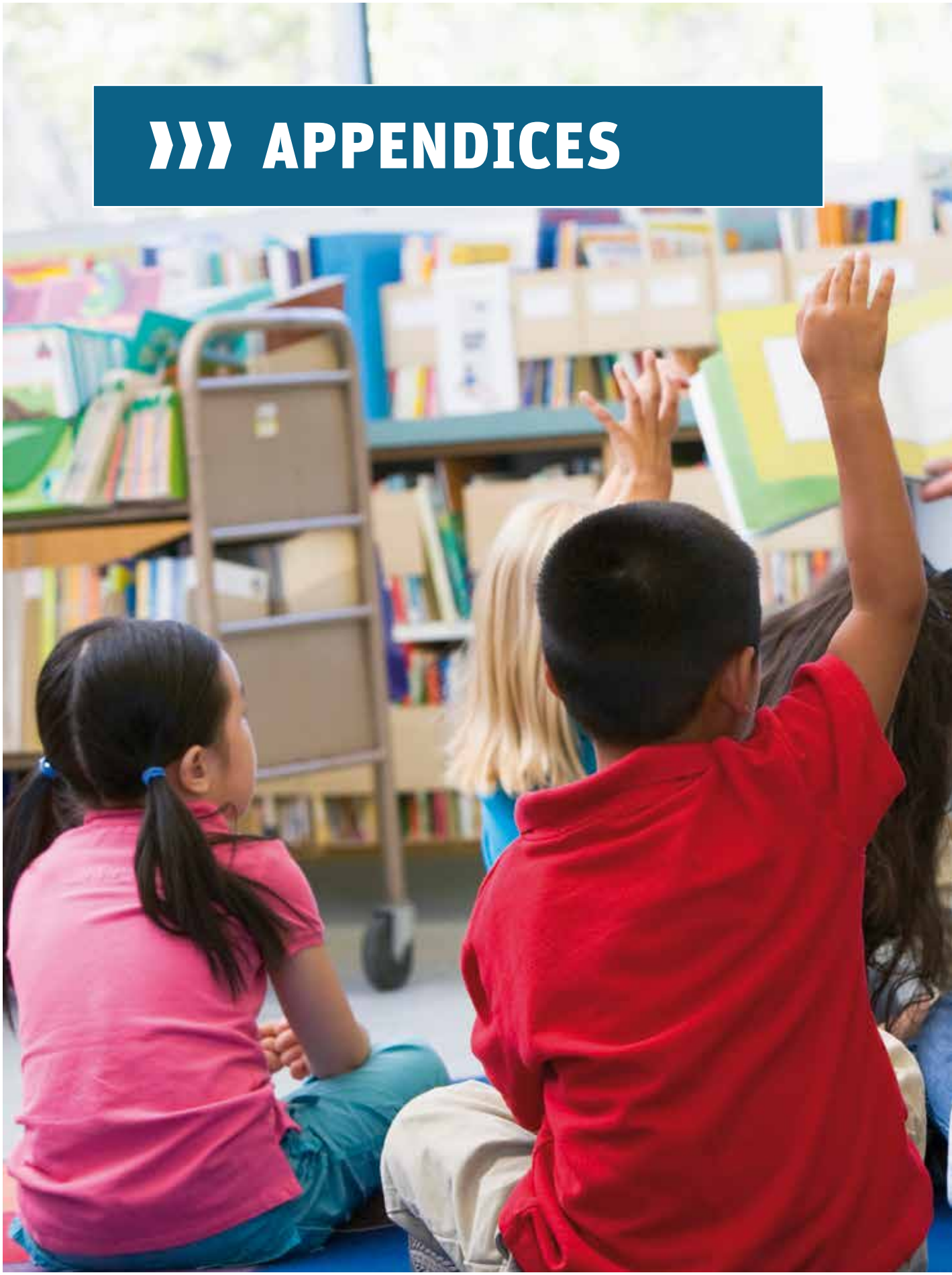
APPENDICES



APPENDIX A | DINE PROGRAM DESCRIPTIONS

The Danone Institute International has made all Danone Institute nutrition and health program material available on a dedicated website. Dedicated to families, health and education professionals, this website features all content for download free of charge.
http://education.danoneinstitute.org

BON APPÉTIT, BOUGE TA SANTÉ !

An educational game about nutrition developed for primary schools, "Bon Appétit, Bouge ta Santé !" (*Enjoy your meal, move your health!*) is an educational tool developed to help teachers work with children aged 8-10 on the theme of healthy eating, physical activity, hygiene and the environment.

This initiative is part of the social commitments of Danone as listed in the "Food, Nutrition and Health Charter". It was developed in collaboration with the European Club of Pediatric Dieticians (CEDE), the Belgian Society of Pediatrics (SBP) and the Danone Institute in Belgium. This tool was designed by dieticians, paediatricians and teachers and respects the primary school curriculum in Belgium.

"Bon Appétit, Bouge ta Santé !" is a unique tool for learning about nutrition because it treats learning to eat well like learning to read and write.

Requests for the game have been very strong: 2000 primary schools have ordered the game, representing one third of primary schools in Belgium in 2011. The material has recently been made available free of charge on the Internet at the following site: www.BonAppetitBougeTaSante.be.

The effectiveness of the game was assessed as part of a study on paediatric nutrition. Children from one class were asked about their knowledge on the subject and about their eating habits on two occasions: before having played the game and three months after.

"The results are encouraging because the children have retained the nutrition rules taught to them. Some of them have even acquired new habits in terms of the organization of their meals, such as breakfast, getting rid of the snack at 10am and taking a balanced snack at 4pm to lower the quantities consumed at dinner," Mrs Emilia Bazin, paediatric dietician, and Marie-José Mozin, paediatric dietician and Honorary President of the European Club of Dieticians of Childhood.

Material includes:

- Flash cards and activities for the home
- Posters for the classroom
- Complete game and teacher's guide book

BABS POSTERS

Contact : Annekatrien De Smedt, annekatrien.desmedt@danone.com

Source: http://blog.bonappetitbougetasante.be/

ABECEDA

Zdrava abeceda is an educational program that was developed by Danone Czech Republic in 2010 in partnership with the Danone Institute in the Czech Republic and AISI, a non-profit organization specialized in pedagogy and education for children.

ABECEDA was developed to support the healthy lifestyle of pre-school children. The program was developed in cooperation with the specialists in the areas of nutrition, physical activity, psycho-hygiene and environmental health. It is present in over 380 kindergartens and over 2000 teachers have been trained. The program is supported by a special game for children that promotes the development of all four axes of the ABECEDA methodology: healthy movement, healthy eating, healthy inner wellbeing and healthy environment.

ABECEDA needs only three participants to be played. Thus, it can be used not only by big kindergartens, but also in small ones or in families with at least two children. The program is accredited by the Ministry of Education and is full-valued educational material.

The specialty of this program, and perhaps what sets it apart from other initiatives, is the training sessions included for the teachers in small groups. This has allowed for a very successful implementation of the methodology in several pre-schools.

Material includes:

- Brochure for parents including a description of the methodology
- Game and instructions for teachers
- Innovative Posters of food and physical activity pyramids
- Guide book to teachers for the methodology

PROGRAM POSTERS

GAME

Contact: Nikola Kristek, AISI NGO: nikola.kristek@zdrava-abeceda.cz

FAUT QUE ÇA BOUGE ! (LET'S MOVE!)

In order to educate children in elementary schools about the benefits of physical activity, the Danone Institute in France has developed a tool kit for teachers that includes ideas for classroom activities promoting a healthy, active lifestyle for pupils.

"Let's move!" program includes several pedagogical tools and activities for children and teachers (www.institutdanone.org/professionnels-enfance). The proposed activities and their ease of implementation in the school environment were selected based upon their ability to promote healthy physical activity habits for children.

The materials were developed by a multi-disciplinary committee of experts including patricians, nutritionists, and doctors, as well as physical activity professionals and teachers.

Materials Include:

- Fact sheets on physical activity and health
- Activity sheets
- A poster
- Booklets for children and families

PROGRAM ACTIVITY SHEETS

EAT LIKE A CHAMP – DANONE UK

Danone's mission is to bring health through food to a maximum number of people. To achieve this, education around healthy lifestyle is key and children are a particular focus with Danone UK's corporate responsibility programme: Eat Like A Champ.

Eat Like A Champ (ELAC) is a healthy eating educational programme aimed at primary school children aged 9-10 (Year 5). The aim of the campaign is to tackle the growing issue of poor nutrition and obesity amongst children through 6 specially tailored lessons about healthy diet.

The concept of ELAC is to make nutrition exciting for children and inspire them to adopt healthy choices of champions they admire, in this case, street dance sensation Diversity. The content of Eat Like A Champ is co-created in collaboration with the British Nutrition Foundation to ensure that the messages are both consistent and linked to the primary school curriculum. Its ambition in the long-term is to become a key healthy eating education partner for primary schools and public bodies.

Material includes:

- Lesson plans for teachers
- Software and website for teachers
- Activities for children
- Take-home materials for families

EVALUATION RESULTS:

- ✔ CHILDREN: 95% of children declared to be eating more healthy food after their ELAC lessons
- ✔ TEACHERS: 100% of teachers found ELAC helpful and relevant
- ✔ Achievements
- ✔ ELAC was recognized as a "good practice" by the EU Platform on Diet, Physical Activity and Health.
- ✔ ELAC won the CSR award from the Institute of Promotional Marketing in 2011
- ✔ ELAC was shared in 3 high-profile meetings or conferences in 2011
- ✔ Fantastic take up by teachers

KIT FOR EARLY CHILDHOOD TASTE EDUCATION

The Danone Institute in France has developed, in collaboration with pediatricians, nutritionists, psychologists and early childhood professionals, a kit for childcare assistant to help with the various stages of baby food weaning and taste stimulation of young children.

The kit was launched and distributed in 2012 to healthcare assistants all over France. The Danone Institute in France invited childcare workers from the field to participate in the elaboration of the material and the working group meetings. These working group members were indispensable for the dissemination of the material as they were able to provide access to several childcare professional networks.

This kit consists of:

- A book of recipes adapted infant nutritional recommendations
- A practical guide to the assistant (s) mother (the) s (awakening to taste, weaning, child development, food hygiene ...)
- A book of nursery rhymes and educational workshops for food discovery
- Informative handouts for parents

The program material is available for view and downloads on the website: http://www.institutdanone.org/professionnels-enfance/les-touts-petits/.

The Early Childhood Taste Education was developed by the Danone Institute in partnership with:

UFNAFAAM

SOLAR EDITIONS
Au cœur de vos envies

PROGRAM MATERIAL

APPENDIX B | TABLES

TABLE 1: WORKING GROUP ROLES

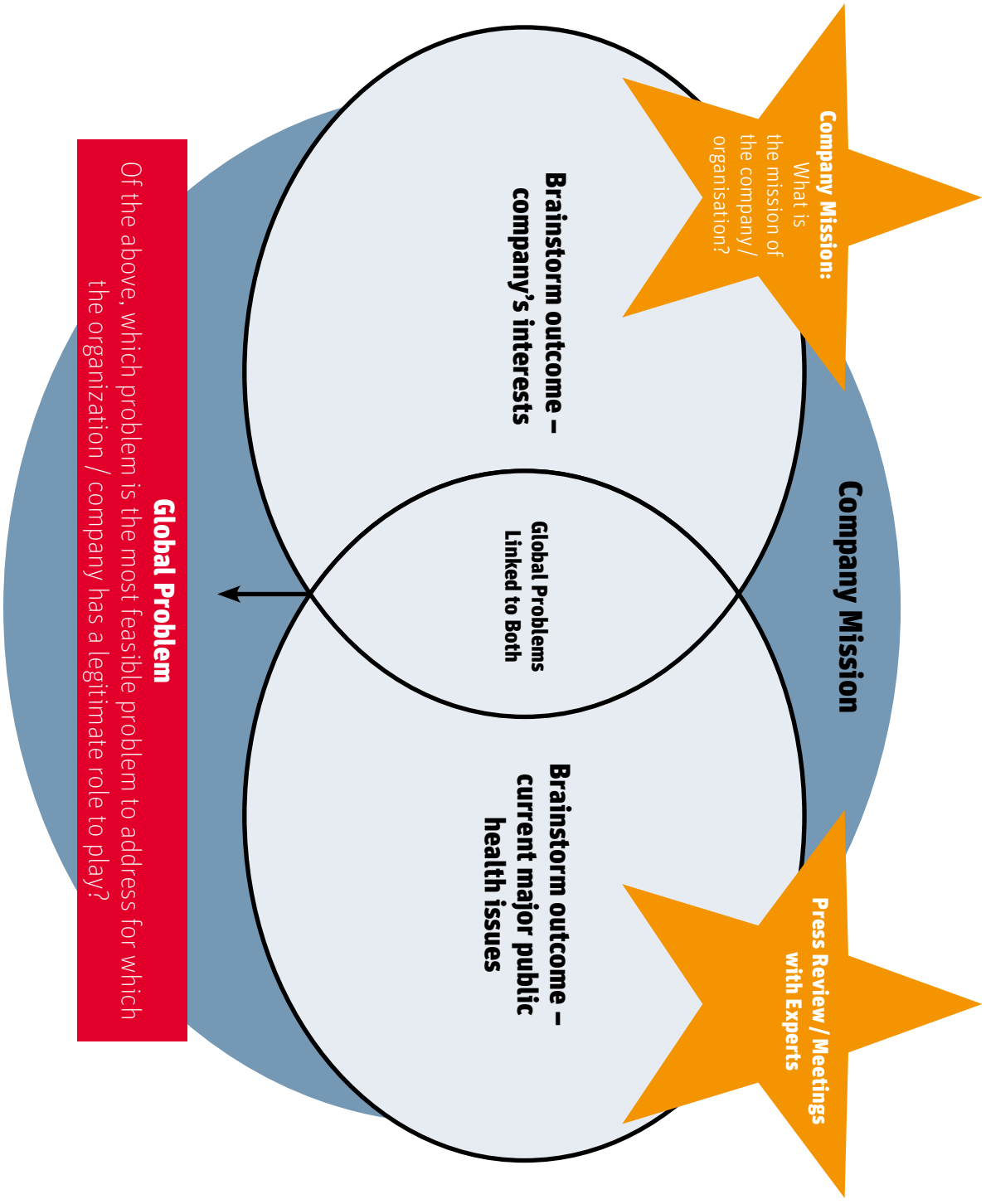
ROLE	DUTY
Project Owner	Person responsible for the program within the initiating structure (company, etc.)
Project Leader/Coordinator	Person in charge of the management of the program development including the coordination of working group meetings and topics for debate/discussion. This person should also manage the timeline of the project and assure its advancement in time. This person is also in charge of assuming the communication between partners and working group members.
Evaluation coordinator	This person will assure that the evaluation of the different aspects of the program is something that is considered at all stages of the program's development. The evaluation coordinator is responsible for assuring that this component of the program is maintained a priority. This person should also be in charge of assembling an evaluation committee with the necessary competencies, including a third-party group if this is necessary and possible. The evaluation committee should include partners, the program initiator, researchers and is responsible for monitoring the control of the program evaluation.
Scientific professionals:, doctors, nutritionists, dietitians, pediatricians etc.	These scientists hold a very important role in the creation of content of the program recommendations and corresponding material. They should also contribute to the development of the program logic, conceptual framework and evaluation. These experts must scientifically validate any program material for its content.
Scientific professionals: sociologists, experts in education, etc.	These scientists hold a very important role in designing the educational approach and strategy of the corresponding material. They should also contribute to the development of the program logic, conceptual framework and evaluation. These experts must scientifically validate any program material for its educational approach.
Field experts: people from target groups	Validate the relevancy of the program material and its pertinence for the target group Verify if the program strategy and material are adapted to the target group Represent the program participants
Communication coordinator	Design the communication strategy of the campaign including communication to general public and target audience Coordinate communication toward partners

TABLE 2: METHODS OF COMMUNICATION

METHOD OF COMMUNICATION	ADVANTAGES
Live communication on location	Personal contact with participants, immediate feedback and exchange with participants High participant engagement Involvement of partners and working group (volunteer company employees, for example)
Media (television, commercials, press, etc.)	Wide dissemination Multi-target use of " catchy " slogans for good retention
Web 2.0 / Social media	Easily adaptable to be used for all target groups although not for children Especially effective for communication toward young parents and teenagers Cost-efficient Environmentally friendly
Paper print-outs	Participants keep a paper trace of the information Wide dissemination Useful for all target groups

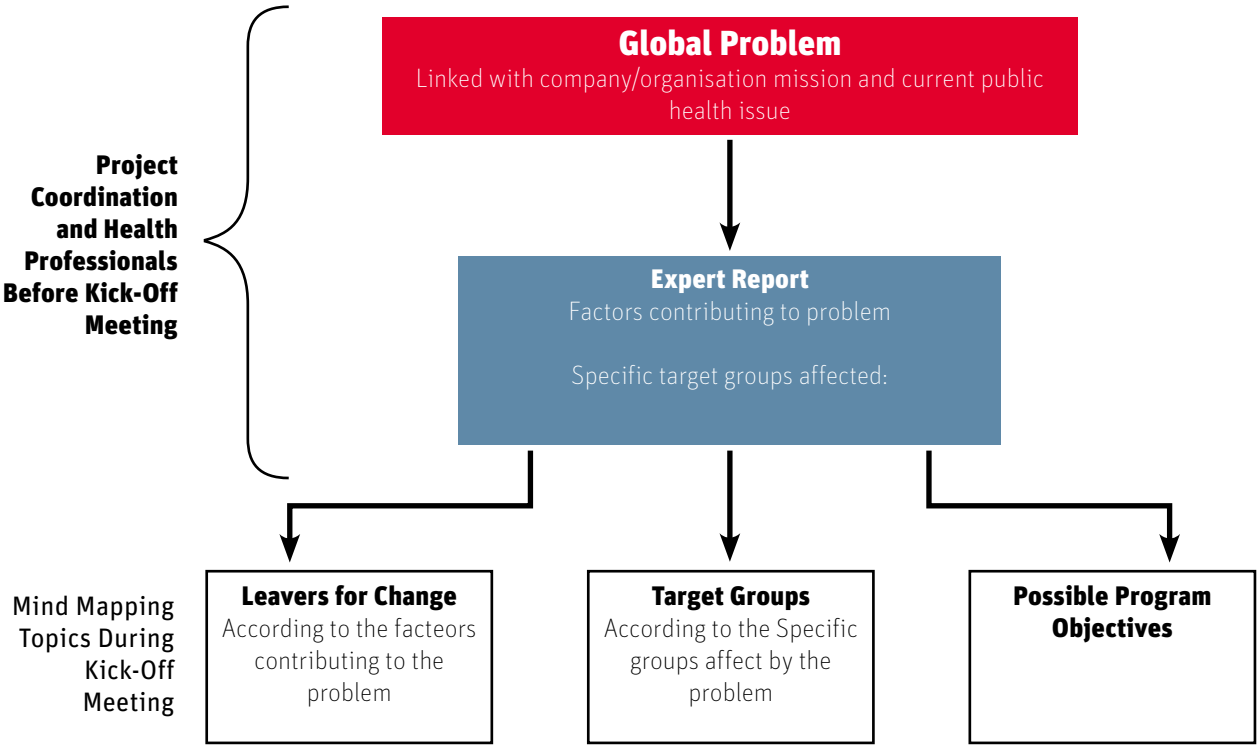
TEMPLATE 1: FINDING A GLOBAL PROBLEM

Use this template to formalize your ideas and identify your global problem.



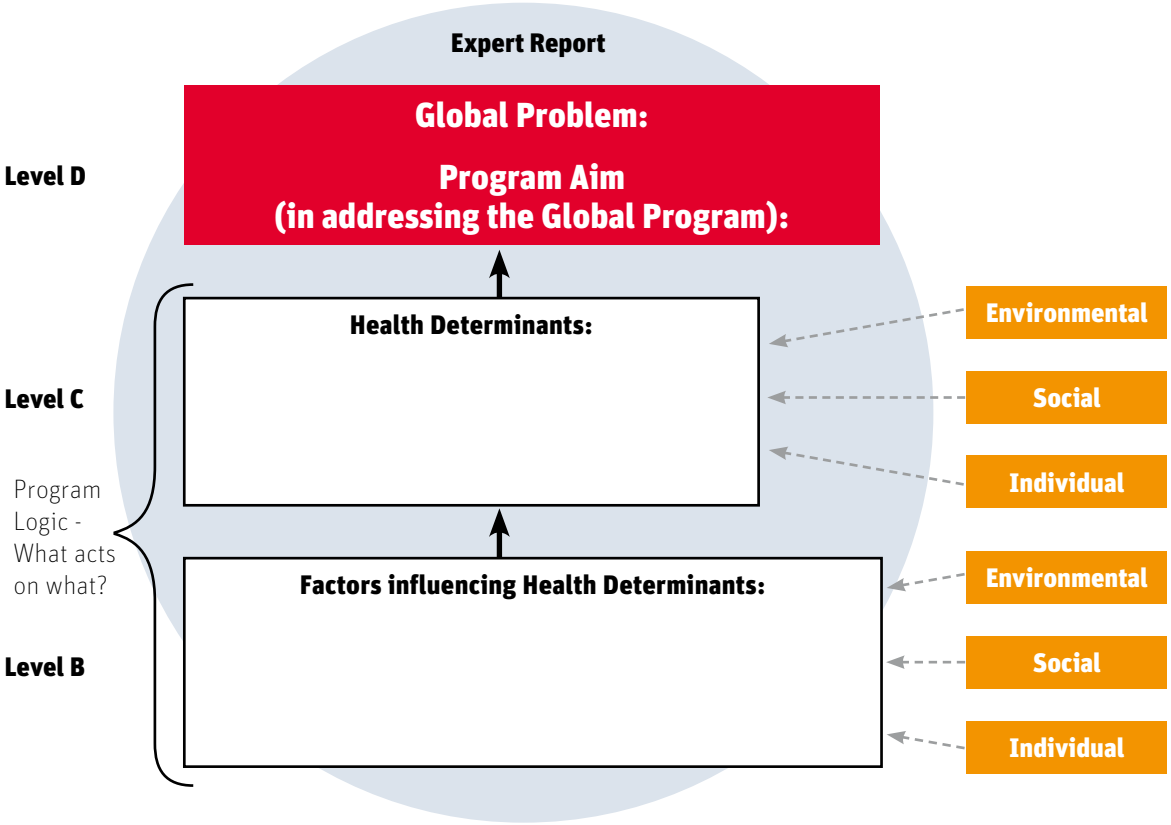
TEMPLATE 2: SUMMARIZING DELIVERABLES OF KICK-OFF MEETING

Fill in the information relative to your program in each box provided



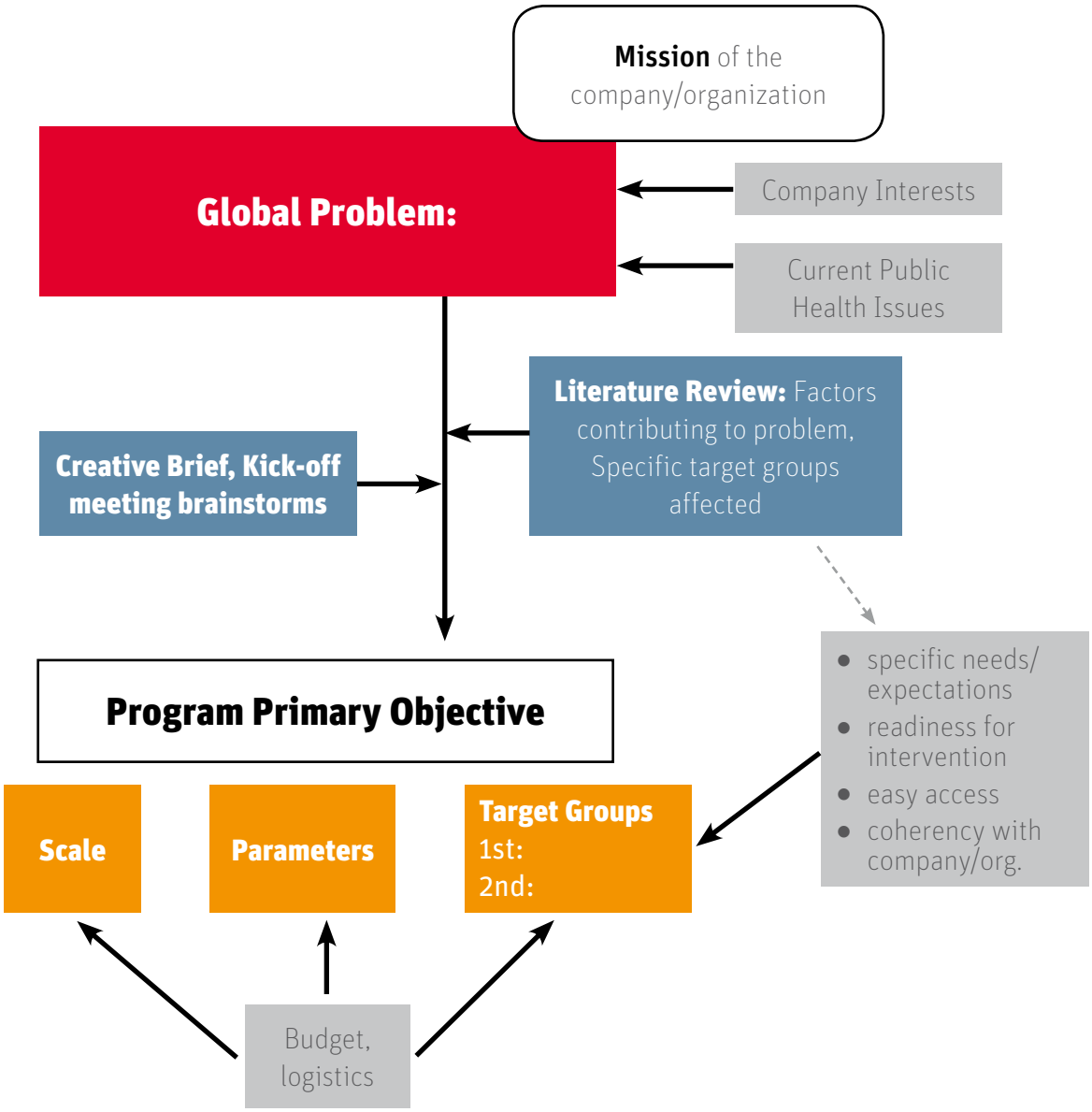
TEMPLATE 3: VISUALIZING THE GLOBAL PROBLEM AND INFLUENCING FACTORS – CHOICE OF PROGRAM FOCUS

Fill in the information relative to your program in each box provided



TEMPLATE 4: VISUALIZING PROGRAM KEY ASPECTS

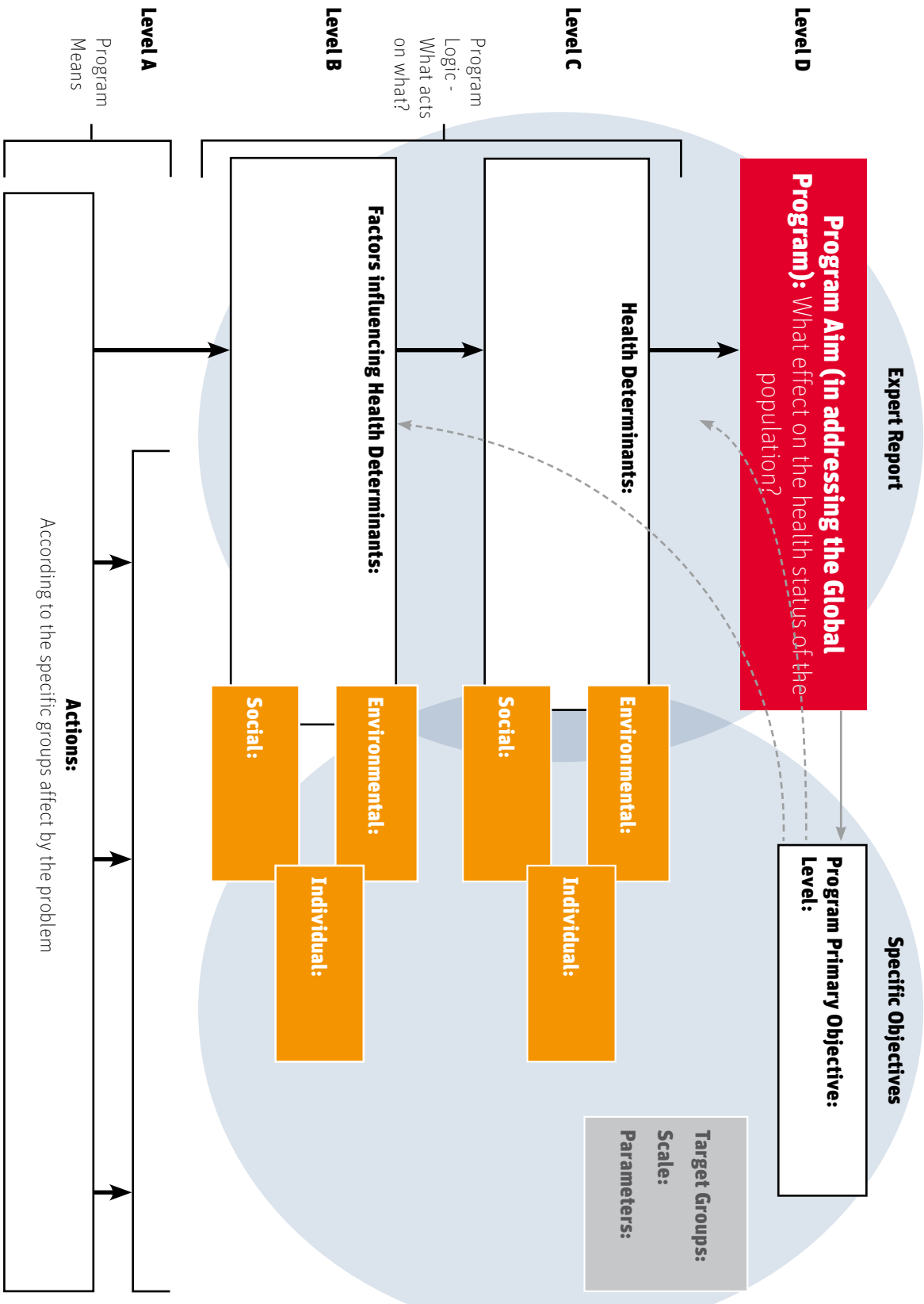
Fill in the information relative to your program in each box. The purple boxes will help you know where the information should come from



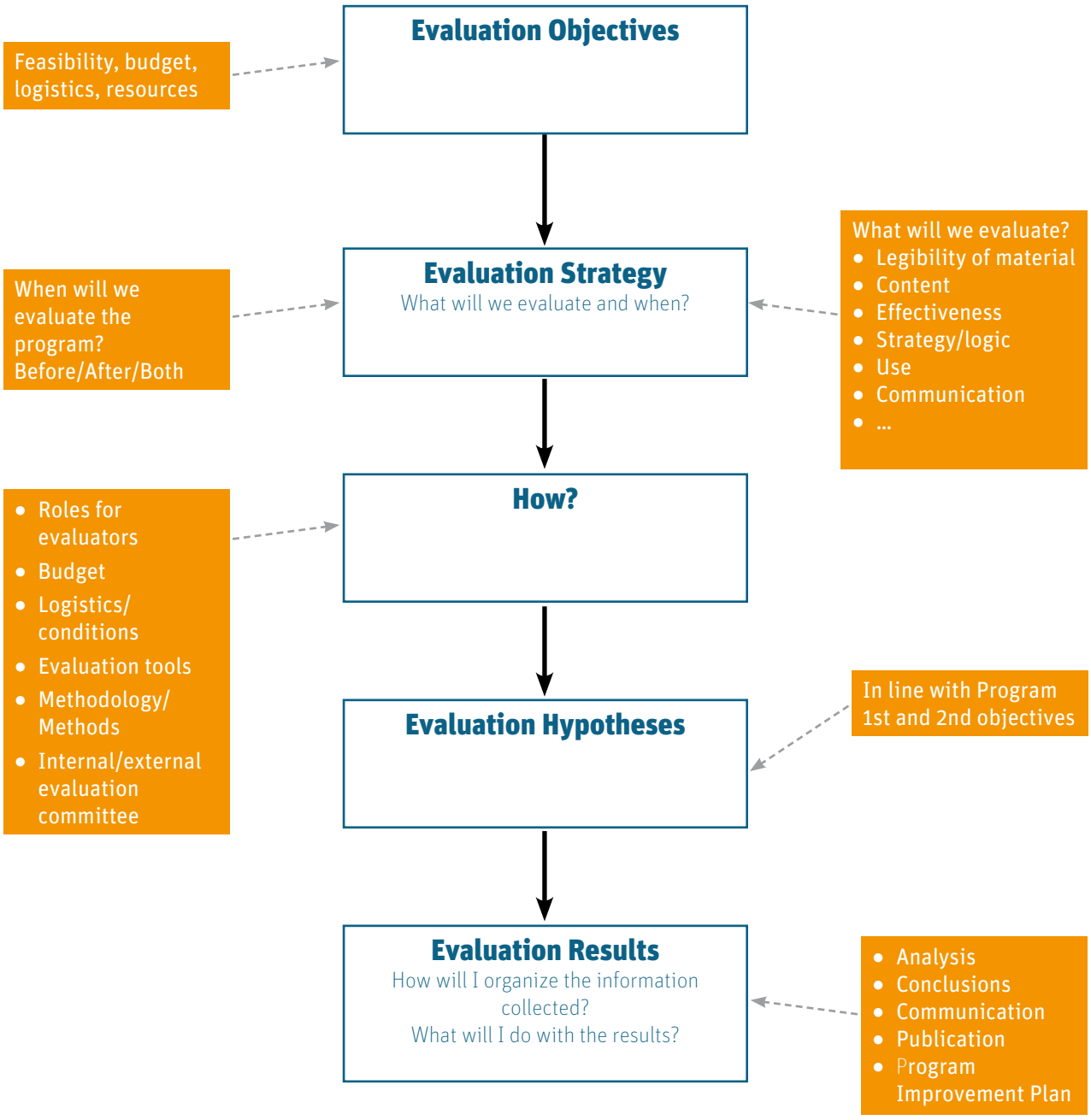
Initial Diagnosis Of Specific Situation
(program target groups, parameters and sale) - Results:
Target group profiles:
Organizational factors (levers and obstacles):
Existing programs:

TEMPLATE 5: CONCEPTUAL FRAMEWORK AND DEFINING INTERMEDIARY OBJECTIVES

Fill in the information relative to your program in each box provided

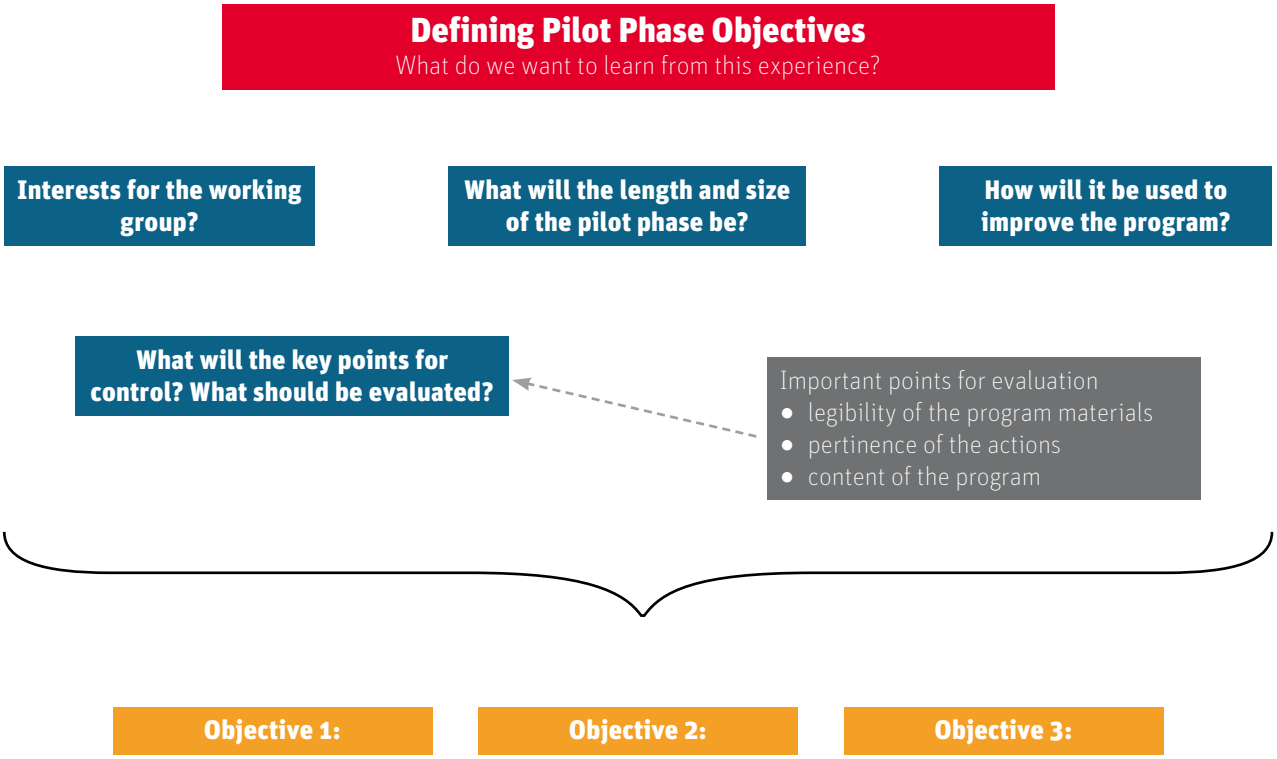


TEMPLATE 6: EVALUATION PLAN



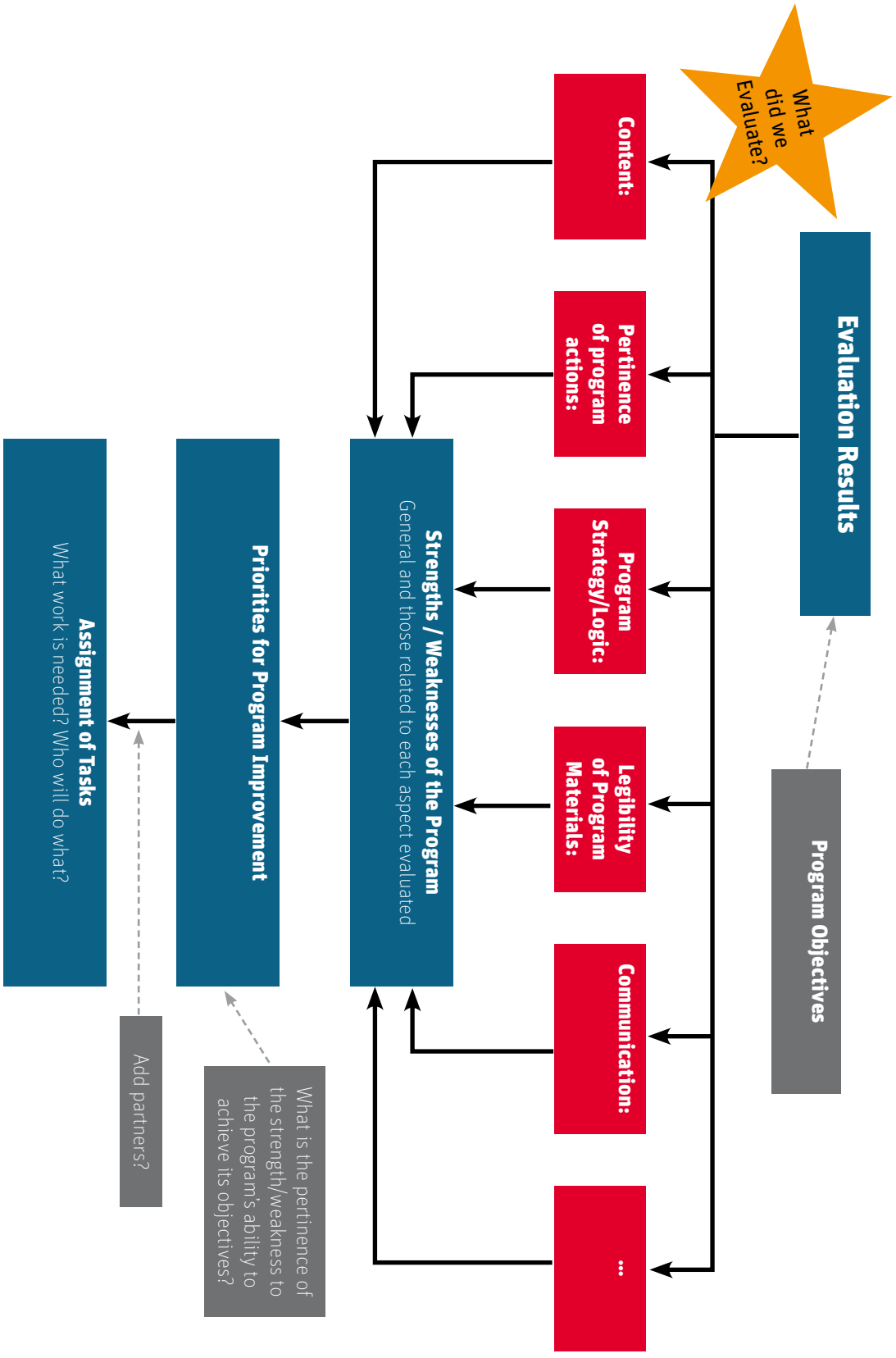
TEMPLATE 7: PILOT PHASE OBJECTIVES

Fill in the information relative to your program in each box provided



TEMPLATE 8: PROGRAM IMPROVEMENT PLAN

Fill in the information relative to your program in each box provided



TEMPLATE 9: POST PILOT PHASE PROGRAM IMPROVEMENT PLAN

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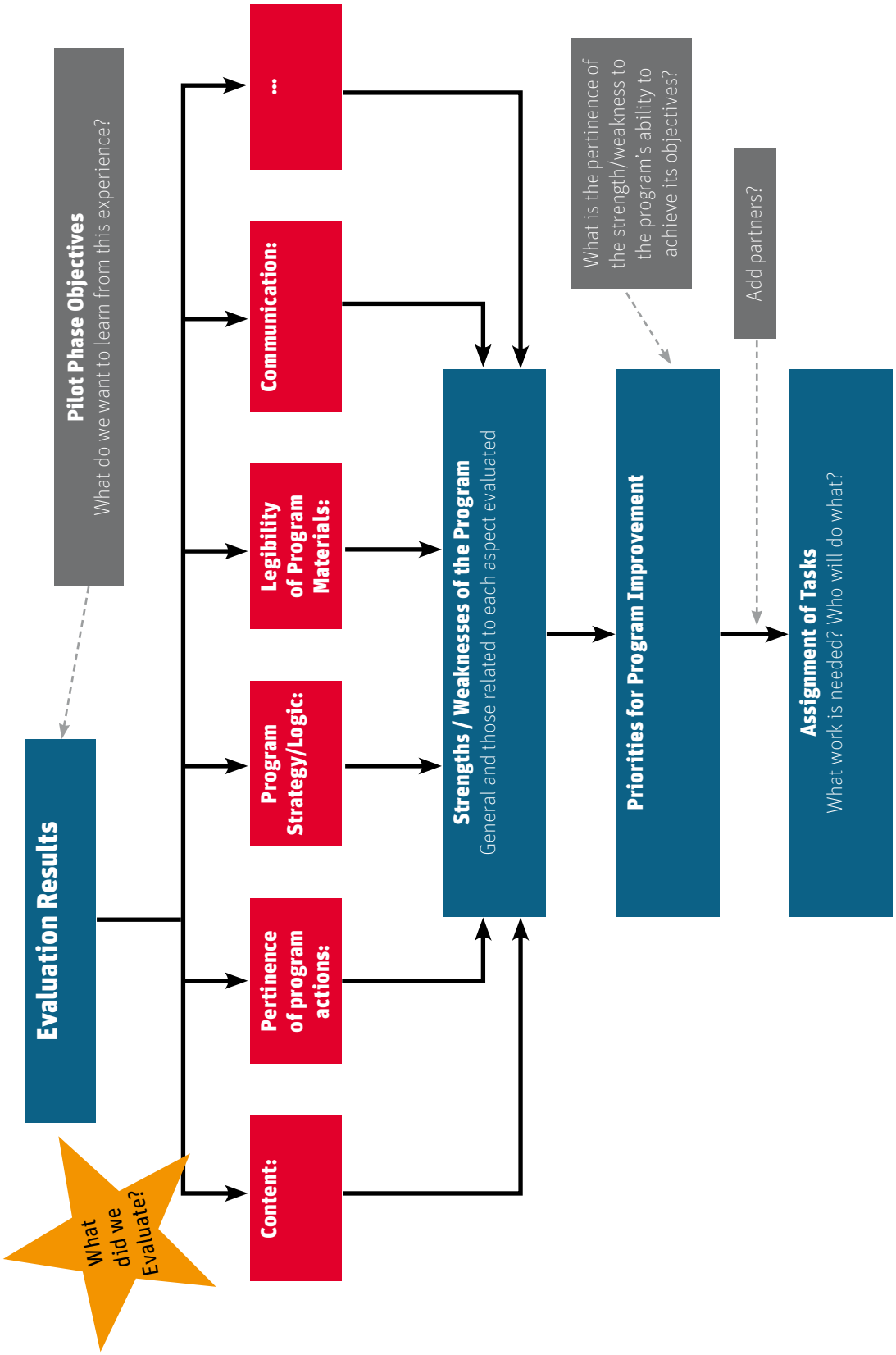
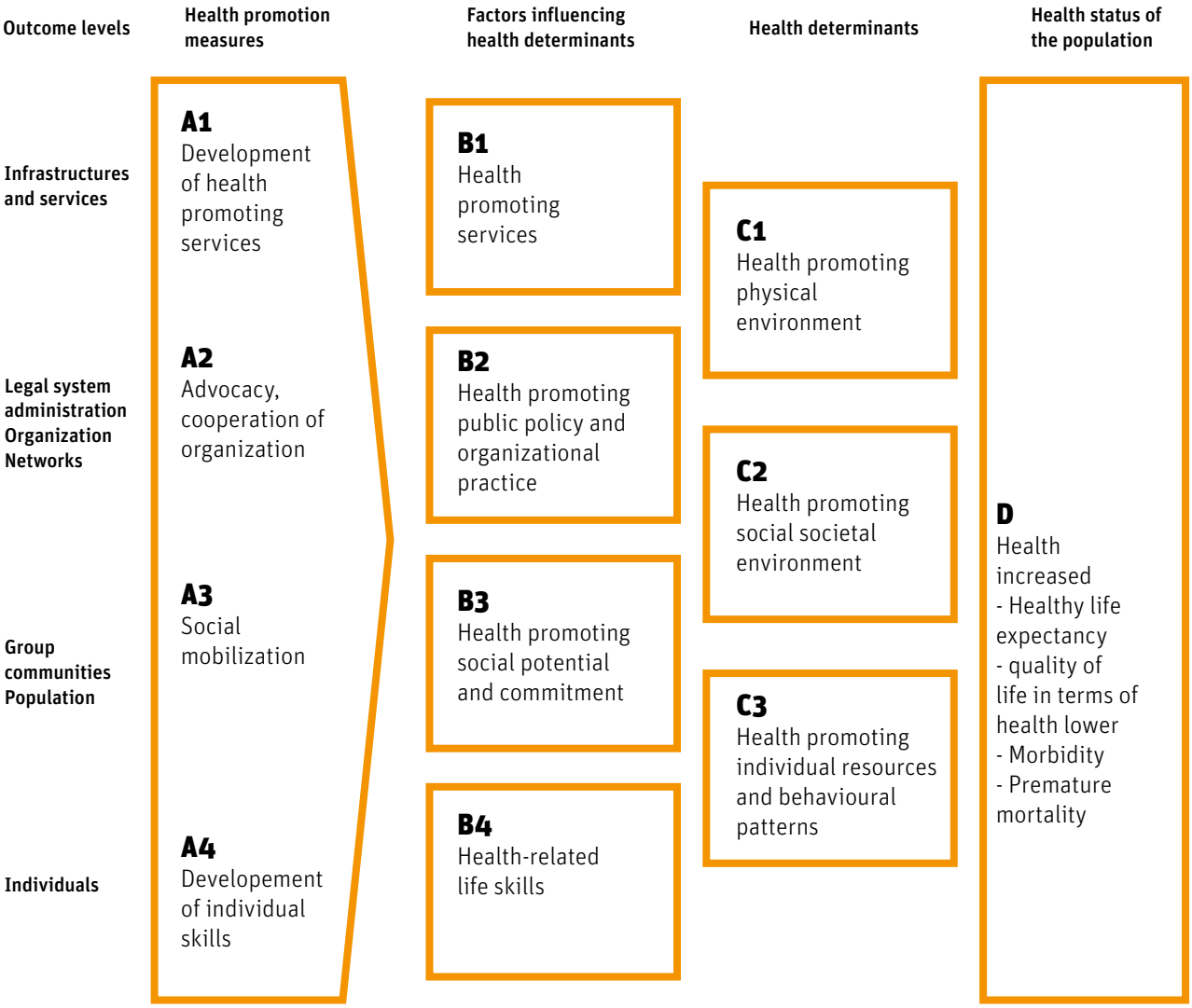


APPENDIX D | HEALTH PROMOTION SWITZERLAND MODEL FOR OUTCOME CLASSIFICATION IN HEALTH PROMOTION AND PREVENTION (SMOC)

The HPS guide categorizes program results into four categories: health benefits for the population group (for example decreased excessive BMI), effects on health determinants (for example, environmental changes), factors influencing health determinants (for example, information to individuals about healthy habits), and actions leading toward health promotion (for example, events or trainings for health promotion). Each of these categories can be approached on the environmental, social or individual levels with corresponding concrete actions.

OVERVIEW OF THE SWISS MODEL FOR OUTCOME CLASSIFICATION IN HEALTH PROMOTION AND PREVENTION (SMOC)



Authors: Cloetta, Bernhard; Spencer, Brenda; Ackermann, Günter; Broesskamp-Sone, Ursel; Ruckstuhl, Brigitte; Spörri-Fahrni, Adrian © Health promotion Switzerland. Guidelines: www.healthpromotion.ch

Source: http://www.gesundheitsfoerderung.ch/pages/Gesundheitsfoerderung_und_Praevention/Tipps_Tools/ergebnismodell.php

THE DANONE INSTITUTES

Danone Institutes are not-for-profit organisations aiming at contributing to improve the quality of the diet and therefore the health of the general population.

In that objective, Danone Institutes:

- Promote evidence-based scientific knowledge in diet and nutrition
- Disseminate relevant knowledge on diet and nutrition to professionals such as health care professionals, teachers, journalists as well as to the general public.

Danone Institutes gather internationally renowned scientists in diet and nutrition, originated from independent organizations (universities, research centres, etc) and are committed to taking a multidisciplinary approach combining medicine, biology, and human sciences.

ETHICS

Danone Institutes are independent from the Danone company. They define their own programs in order to be relevant in their local environment, have no commercial objective, act freely and independently. They function on the basis of guidelines which guarantee a clear and democratic organisation. Danone Institute publications never contain any commercial information.

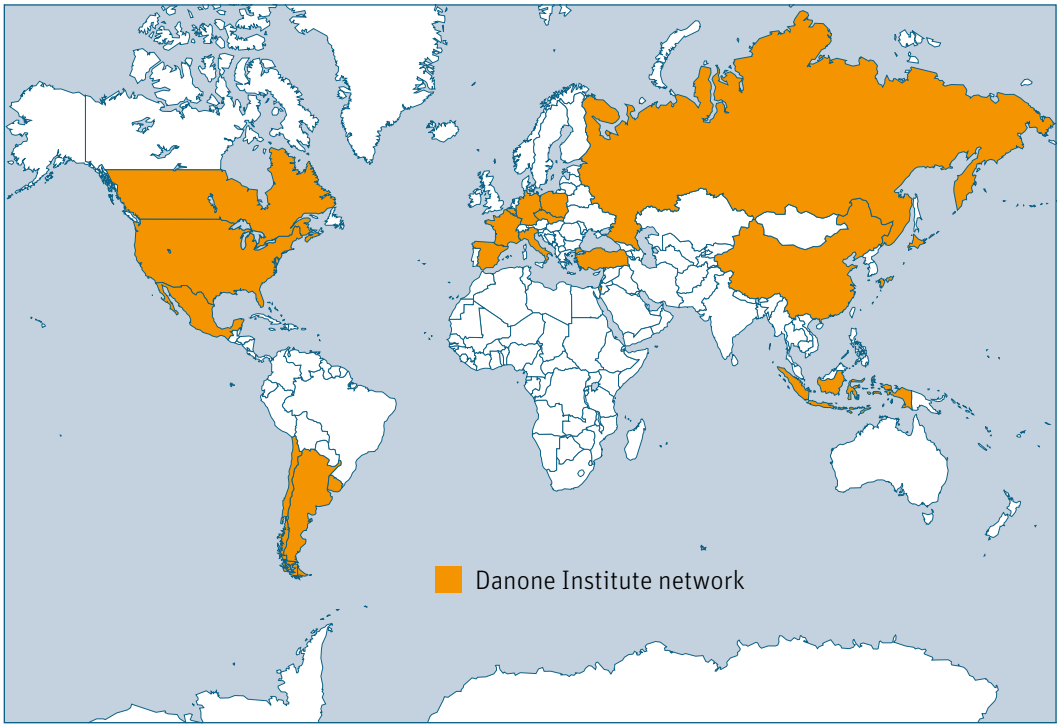
HISTORY

The first Danone Institute was created in France in 1991. Since then, an international network of 17 local Danone Institutes was developed around the world in Belgium, Canada, China, Czech Republic, France, Germany, Israel, Italy, Japan, Mexico, Poland, Russia, Spain, Turkey, USA, Indonesia and Southern Cone (Chile, Uruguay, Argentina), and more than 200 renowned experts in diet and nutrition are involved in this unique international network.

In each country, Danone Institute develops specific programs including:

- research support through grants, credits, awards, fellowships, scholarships...
- organizations of scientific conferences, of training and education sessions for professionals (health care professionals, journalists)
- publication of newsletters and books for professionals (health care professionals, educators, journalists)
- production of pedagogic material, leaflets, booklet, TV and radio programs, PC games... for parents, pregnant women, children, teenagers, and the elderly.

In 2004, was created an international entity in order to develop international activities such as research support, scientific conferences or publications, to enhance collaborations between Danone Institutes and/or their members as well as to promote sharing of experience between Danone Institutes.



ACTIVITIES

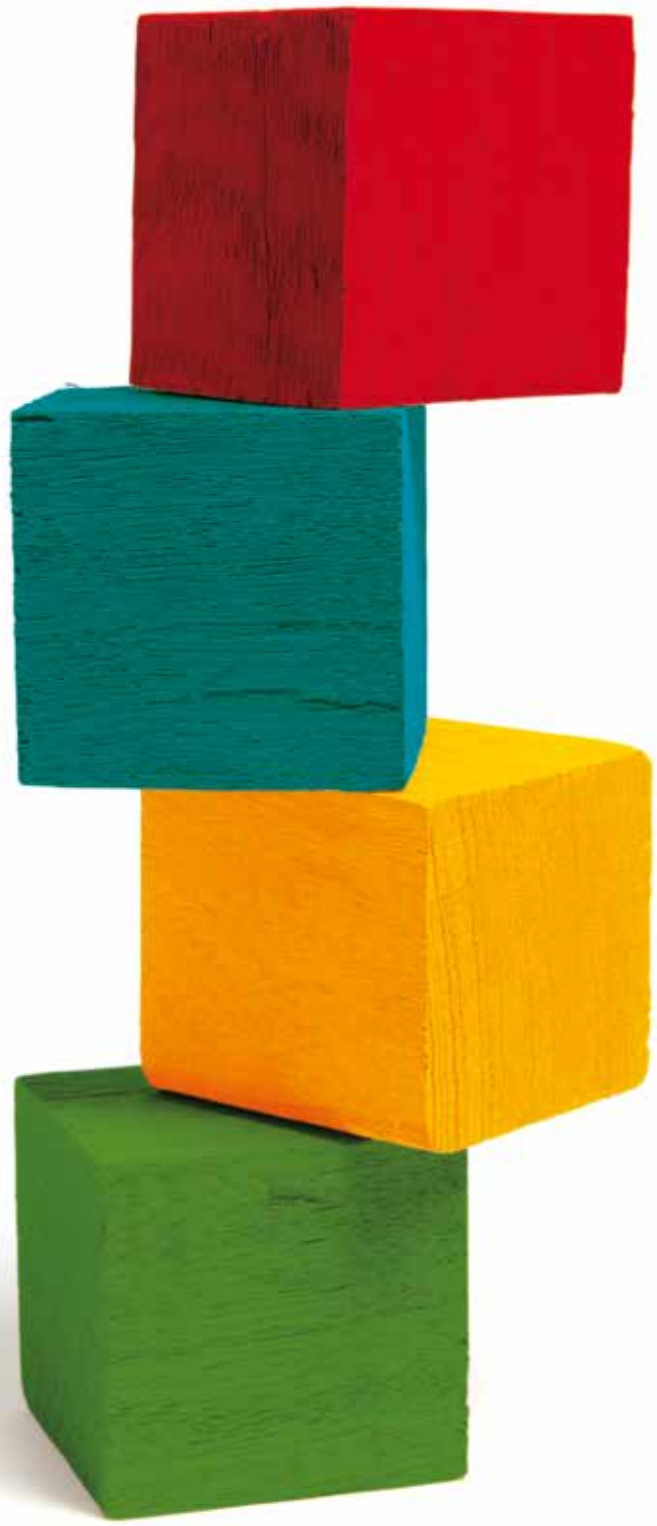
Support to research through prizes and award: Up to date, Danone Institutes funded more than 900 research studies, which accounted for more than 18 million Euro and more than 150 prizes and awards have been attributed to outstanding professional initiatives.

Symposia, workshops and educational meetings: Since 1991, more than 175 events involving top-level scientists have reached more than 37 000 health professionals. In 2013, the Danone Institute International and the American Society for Nutrition (ASN) are partnering with The Nutrition Society (NS) in the United Kingdom on a multi-year initiative, the Yogurt in Nutrition Initiative for a balanced diet, to examine and document the health effects of yogurt, stimulate new research and communicate available scientific information to health care professionals and the public

Publications related to health & nutrition: 100 publications and 10 newsletters present professionals with overviews of recent developments, promote consensus and/or explore controversy of relevant issues.

Education programs for the general public. More than 90 programs towards the general public such as nutrition lectures, distribution of folders and brochures, etc. have been organized. A selection of this programs are available online, with lots of free downloadable pedagogical tools on www.education.danoneinstitute.org

TO LEARN MORE
ABOUT DANONE INSTITUTES AND THEIR ACTIVITIES AT
WWW.DANONEINSTITUTE.ORG



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Nutrition for Health

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