BRIEFING PAPER 2

NICK
(Nutritional Improvement for Children in Urban Chile and Kenya NICK Project)[*]

Setting up of a Participatory Action Reflexion Learning (PARL) Group

The Chilean Experience

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Abstract

Since 2010, the Nutritional Improvement for Children in Urban Chile and Kenya (NICK) Project has sought to help two project countries, Chile and Kenya, reduce malnutrition in young children. This paper describes a social educational process by which a Multisectoral Participatory Action Reflection Learning Group (PARL) was established and supported as a tool to change the social determinants of child overweight and obesity in a low-income neighbourhood, in Valparaíso, Chile. In this area local municipal policies do not encourage or provide access to healthy eating opportunities and adequate physical activity. The aim was to bring together different groups and sectors, introduce a governance lens and enable the necessary mind shifts to assure dialogue and cross sector intervention. The findings show that the educational process used was effective in enabling multisectoral planning activities, stakeholder's analysis and the development of a local Plan of Action. Finally the paper reflects on the complexity of childhood obesity and value of using this type of action research to find new ways to change the social determinants. It identifies what needs to be understood and to be done differently in order to introduce change and transform hierarchical and asymmetrical work models.

1. Introduction

Since 2010 The Nutritional Improvement for Children in Urban Chile and Kenya (NICK) Project has sought to help two project countries, Chile and Kenya, reduce malnutrition in young children since 2010. In Chile the major concern is child overweight and obesity and the central research question guiding the study in Chile is: Can child overweight and obesity amongst families living in poverty in informal settlements and slums in Valparaíso be reduced through broadening community and stakeholder participation to change the social determinants of nutritional status?

This paper focuses on the challenges that have emerged in relation to the development of the urban nutrition working group which was established by the in-country researchers on the NICK Project in Valparaiso. In Chile this working group is known as the Participatory Action Reflection Learning Group (PARL)[1]. This paper is also concerned with the mechanisms that assure sustainable actions and strategies. It recognises that childhood obesity is a product of the complex and dynamic relations between distinct types of determinants and that the pathways or mechanisms to reduce child malnutrition cannot be linear and are hard to predict, because they require the participation of many sectors and systems. Childhood obesity is increasingly considered a "wicked problem" (Kickbusch, 2010 2010a), because it is an issue that is highly resistant to resolution and a good example of complexity. The successful solving or at least the management of this complex, wicked policy problem necessarily requires reassessment of some of the traditional ways of working and solving problems. These problems challenge governance structures, skills and organizational capacity (WHO, 2011).

In order to identify pathways to reduce child malnutrition the Valparaiso PARL group has considered it necessary to explicitly analyse and recognize child over weight and obesity as a "wicked" problem. The PARL group, made up of an intersectoral community -– regional government representatives, local health and education organizations, academia and community- began working to develop a broader understanding of obesity trying to avoid the general tendency to act and try to find 'quick fixes' or "simple sustainable" solutions to child malnutrition.

The learning approach and the capacity building programme of the PARL Group is grounded in experience gained from previous projects including the WHO Healthy Urbanisation project in Chile and the Chile Healthy Urbanisation Project. These projects successfully brought together different groups and sectors, building a common agenda step by step, and developing a participatory learning process that has been tried and tested in a similar context..   The learning process has been tailored to meet the needs of the Valparaiso PARL group and the specific local cultural context in which child obesity is described, considering the political processes that involve a plurality of actors, and that take place in multifaceted and rapidly evolving context.

The strategic shift from individual to structural determinants in relation to food and nutrition allows broad coalition-building and broad focus on the political, social and environmental determinants of health.   Population health cannot be achieved without collaborative approaches; it requires an active state, but, above all, it requires the involvement,

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[1] In Mombasa, Kenya, this group was called the urban nutrition working group.

motivation and commitment of citizens and a wide range of social organizations. Correcting nutritional policy requires knowledge of how systems work and communities need to understand how the legislature decides to allocate money. Social policy should address upstream factors that affect health through these complex causal pathways over potentially long time period.

The concept of "sustainability" implies a long term paradigm shift from a model of development based on inequity and exploitation of resources to one that requires *new forms of responsibility*, solidarity and accountability not only at the national but also at the regional and local level. This requires long- term, constant, persistent and rigorous action and continuous learning and training that ensure the application of new skills and a high level of systems thinking and approaches which consider the system as a whole, interactions between different elements and possibilities for intervention.

The PARL Group has therefore developed a comprehensive approach to obesity oriented to eventually addressing both dietary habits and physical activity patterns of the population of the research intervention site. The aim has been to address both societal and individual level factors as well as immediate and distant causes; to have multiple focal points and levels of intervention (at regional, local community and individual levels) and to include both policies and programmes.

This briefing paper is organised into the further six sections:

- Childhood obesity and over weight in Chile
- Conceptual considerations and challenges
- The participatory action research learning (PARL) process
- Theoretical frameworks and models for action by the PARL Group
- Challenges in achieving Mind shifts
- Achievements
- Conclusions: Challenges and constraints

2.   Introduction: Childhood obesity and over weight in Chile

A recent study conducted by the National Health Survey (MoH, 2010a) found that 39% of Chileans between the ages of 15 and 17 years of age are overweight, and around 300,000 young people suffer from morbid obesity. To break down the statistics even more: 27.1% of girls and 28.6% of boys between 5 and 17 exceed the healthy height/weight ratio. These figures place Chile in sixth place as the country with the highest level of childhood obesity in the Organization for Economic Cooperation and Development (OECD 2009).

These high levels of obesity and overweight have been increasing over the last 20 years and seem to be more acute in children from lower income households. The national prevalence of over-weight was reported to increase with age, being 6% in children 2-3 years old, 11% in children 3-4 years old, and 14% in children 4-5 years old (Vio et al., 2007). The 2010 National Health Survey also has shown a worrying tendency to worsen; obesity, for example, in children under 6 figures stagnated at around 10% and the goal

was to bring it down to 7% (MoH / DEIS, 2010b), in school children (6/7 years old), obesity increased from 16 % to 23.1% and the MoH goal was to reduce it to 12%.

This increasing prevalence of overweight and obesity in Chile is contributing to substantial health, social and economic costs to individuals and the wider community. Obesity is prevalent across the lifespan - affecting infants, children, adolescents, adults and seniors. Because of this, in Chile, the prevalence of over nutrition in the population and finding ways to combat it has been a focal point of public health discussion. Over the last few decades, Chile has experienced rapid epidemiological transition, leaving communicable diseases, to make way for non-communicable diseases (NCDs). Many of these diseases are associated with unhealthy lifestyles, such as smoking, poor eating habits and sedentary lifestyle (Albala et al, 2002).

In this context, the Ministry of Health has set health objectives for the first decade of the Millennium (2000 - 2010), among others, to reduce the risk factors associated with NCDs: reduce consumption of tobacco, sedentary lifestyle and obesity (Salinas et al, 2004). But these epidemiological and nutrition changes in Chile have been so rapid that maternal and child policies were not changed successfully to address these changes until 1998, when the National Board for Health Promotion was created. This Board introduced a robust health promotion policy to cope with the increasing obesity in the country (Vio, 2007). Although the policy was well designed (following a decentralized model for regions and counties, focusing on the main risk factors for chronic diseases, having well-trained human resources, and changing food programs to cope with obesity instead of undernutrition) obesity has continued increasing and these efforts have been insufficient for decreasing obesity prevalence in the country. The main reason for this failure appears to be a lack of political commitment to making obesity prevention a high priority for funding and regulation (Vio, 2008).

Over the past two decades rapid urbanisation, increased sedentary behaviour, and a transition in dietary patterns have resulted in a fast rise of obesity in middle-income countries such as Chile and even in some low-income countries. In Chile there has been an associated rapid shift in diet to increased consumption of high energy-dense foods and calorie rich beverages and animal-source foods, and calorie rich sweeteners have been added to many other foods. Between 1980 and 1998, the average daily per capita calorie consumption increased from 2.667 kcal per 11.159 J (21% fat) to 2.844 kcal per 11.899 J (28% fat) (Albala, 2002). This dietary pattern, together with a sedentary lifestyle, has been widely associated with obesity.

In general, the population knows both what healthy eating means (as shown in different National Surveys) and the benefits of engaging in physical activity, but many people persist in eating foods that are high in sugar, fat, and salt and in leading inactive lives.

In Chile, childhood obesity prevention in the school setting, during the school day, has also received a great deal of attention. Nursery school children spend much of their time at school, and government agencies and specific nutrition programmes provides them with opportunities for improving food and beverage consumption and levels of physical activity. The National Board for School Assistance and Scholarships (JUNAEB, 2010) and the National Board for Day Care Centres (JUNJI), has been implementing a strategy which aims at setting up healthy eating habits and increasing physical activity throughout the life cycle. This strategy places emphasis on the first stage of life, because evidence shows

that the most cost-effective actions address pregnant women, nursing mothers and children up to six years of age. However,nursery school teachers and regional government authorities from the health and education sector agree that even the most motivated adult or parent, or the best-trained child, finds it difficult to act in healthy ways when surrounded by an environment, which does not support or even allow such activity.

As has been pointed out, despite the different programs that have been created in Chile childhood obesity is still increasing. The governmental policies developed by the Ministry of Health have been focused on the reduction of fat, salt and sugar intake and increasing the intake of "healthy food" as vegetables and fruits and increase the physical activity of children. As Vio (2008) points out "a clear, high-priority strategy to prevent obesity is necessary at the national level. It will require the participation of schools and preschools at the county level. It will also require involvement by both the government and the private sector. The government will need to enact laws and regulations against the marketing of unhealthy food practices by the food industry and promote physical activity at all levels of society. The private sector will need to compromise on issues related to agricultural production that affect cost of high-calorie foods. The lack of awareness in the Chilean population of the pathology of obesity and its consequences, the implementation of programs of preventions and treatment of this disease led by the health authorities is of fundamental importance. Without such a strategy, Chile will not get the Millennium Development Goals back on track.

Evidence indicates that solutions to obesity must take into consideration the environments in which children live, learn, and play. The characteristics of these environments, such as the *availability* of healthy foods and beverages, the safety of streets, and the *accessibility* of recreation opportunities, can have a strong impact on whether children become obese.

Evidence demonstrates that strategies to control the obesity epidemic must work at many levels, and their impact will reach far beyond the health outcomes: they will also have economic, social and political impacts as well as unintended consequences.

(Slama, 2005)

The NICK Project: It is within the context that has been described above that the NICK Project is situated.. The aim of the project has been to support two project countries, Chile and Kenya, to reach their Millennium Development Goals (MDGs) through reducing malnutrition in young children living in the urban slum areas of major cities in these countries.   In Chile the major concern is child overweight and obesity and the research team have been exploring whether child overweight and obesity in Valparaiso can be reduced through broadening community and stakeholder participation to change the social determinants. The specific questions being addressed are:

1) What are the social determinants of child malnutrition in the two study sites?
2) How effective are any policies, initiatives and networks that are already in place in influencing these determinants in those sites?
3) What are the constraints on the effectiveness of these policies, initiatives and networks in those sites?

4) What are the actions, pathways and mechanisms (including those in existing structures) through which broadening community and stakeholder participation can be made most effective in reducing child undernutrition in a sustainable way?
5) What are the main implications and lessons learned for policy development and implementation at scale in the project countries and for other countries?

The study site in Chile is the city of Valparaíso where problems of poverty and exclusion are being experienced but have been overlooked, in part, because of the city's strong economic performance and impressive aggregate social indicators. In Valparaíso is of comparative interest because there are spiralling rates of child over-weight and obesity (Kain et al. 2005), especially in low-income families, and the Ministry of Health has recognised the need to study and tackle the social determinants of this problem (MoH 2010c). The Regional Health Office of Valparaíso has found that 9% of pre-school children attending primary health clinics are over-weight, and that school children from first grade show high prevalence of obesity rates (20,6%). Educational interventions to encourage healthy eating and physical activity have not been sufficient to reduce obesity rates and there is a need to address the problem.

In the initial phase of the research comprehensive literature reviews were carried out by the members of the core research team. (see
 http://www.ioe.ac.uk/research/departments/hsse/56520.html) These reviews underlined the need for the team to define a common working definition of the social determinants of malnutrition. The following working definition has guided the actions and strategies of the PARL Group to tackle the different realities of the study sites.

The social determinants of child malnutrition have been defined as a broad range of social, economic and environmental factors operating at multiple levels of social organizations. They include education, income, working conditions, housing, neighbourhood and community conditions, and social inclusion.

They operate through public policies that control the level of resources available to communities and households and are affected by the degree of social justice in society and the status of women. When they are distributed unequally across the population they lead to inequities in the level and distribution of child nutrition.

Because the social determinants are largely controlled by sectors other than health, moving towards nutrition equity entails involving other sectors to address public policies that impact nutrition. The role of health systems is therefore often not to act directly on the social determinants but rather to foster and lead intersectoral partnerships that have as an aim action to change the determinants and tackling of nutrition inequalities.

3.   Conceptual considerations and challenges

3.1.   What needs _to be understood differently_ to introduce change in the social determinants of child overweight and obesity in poor urban areas in Valparaíso?

As argued above the causes of childhood obesity are complex. The simple explanation is that too many calories are ingested (through consumption of food and beverages) and too few calories are expended (through physical activity). However, the physiological solution (a balance between the amount of calories consumed and used) is more than a matter of individual willpower or personal responsibility (Swimburn et al, 1999).

In Valparaíso, living in an environment that lacks healthy food choices and encourages unhealthy ones is a challenge to overcome. The baseline data were collected for the NICK study through Anthropometric and Household Surveys in families who have a child attending a government sustained Day Care Centre (JUNJI) in the intervention areas – the hills of Playa Ancha and Cordillera. These data describe an environment that offers no place to play and nowhere safe to walk, discouraging physical activity.
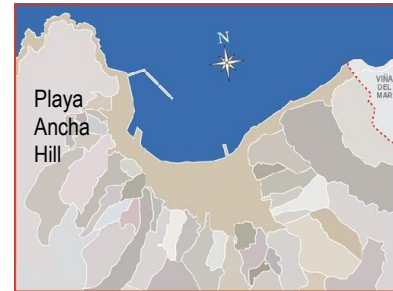
The area of intervention is considered a low-income neighbourhood where local municipal policies do not encourage or provide access to opportunities for healthy eating and adequate physical activity. In Playa Ancha it is difficult to find healthy grocery store options or park and playground facilities. In these lower-income neighbourhoods there are higher levels of the availability of high-calorie, low-nutrient foods and beverages, and the prevalence of advertising. On the other hand, the availability of nutritious foods, and social marketing on the value and attractiveness of nutritious foods, are rarely found.

In this context "it is unreasonable to expect that people will change their behaviour easily when so many forces in the social, cultural, and physical environment conspire against such change." (IOM, 2003) This view is echoed by researchers studying the effect of the social environment on physical activity: "Advising individuals to be more physically active without considering social norms for activity, resources, and opportunities for engaging in physical activity, and environmental constraints such as crime, traffic, and unpleasant surroundings, is unlikely to produce behaviour change" (McNeill et al., 2006). Conversely, changing people's environments to provide equal access to factors that determine health will enable them to better control their health and its determinants, make healthier choices, and thereby improve their health.

In order to design environmental interventions to tackle obesity and consider how people, families', schoolteachers and different groups of individuals, interact with their environments, the Chilean PARL group adopted the concept of an "obesogenic environment". (Kickbusch, 2010b).

An obesogenic environment is understood as a set of circumstances that encourages people to eat and drink more calories than they expend and in consequence become obese. (Kickbusch, 2010b). It describes situations that encourage overeating and under-exercising; it is not considered an inevitable by-product of modern living, rather, created, recreated, challenged or reinforced by the countless everyday actions (and inactions) of individuals, society, business and government (Garrard, 2009).

In generic terms three environmental factors interact with individual factors (biological and psychological) to shape health outcomes: the physical environment, the social/cultural environment and the policy/regulatory environment.

- The term 'physical environment' includes the built and natural environments; the built environment encompasses land use patterns, transport systems, and design features of the built environment (Gebel et al 2005) and the natural environment include topography, vegetation and landscape.

- The 'social/cultural' environment refers to social values, preferences and behavioural norms.

- The 'policy/regulatory environment' refers to governance, policies, legislation, regulations, codes and standards and their enforcement.

These three types of environments interact with each other and with individual factors to influence physical activity and eating behaviour. The other important characteristic of environments for health is that they manifest as both macro and microenvironments. For example, a government policy, such as permitting junk food advertising during children's television-viewing times, represents a macro level policy environment or acting on upstream factors, while parental restrictions on children's television viewing creates a micro or policy environment or actions on downstream factors. Microenvironments are often referred to as the 'settings of daily life', close to where damage is observed, and include communities, schools, workplaces, homes and streets.

Macro issues/upstream factors, far from where damage is observed (Braveman, P. 2011), such as integrated urban planning and transport systems that need to be adapted and managed at micro levels.
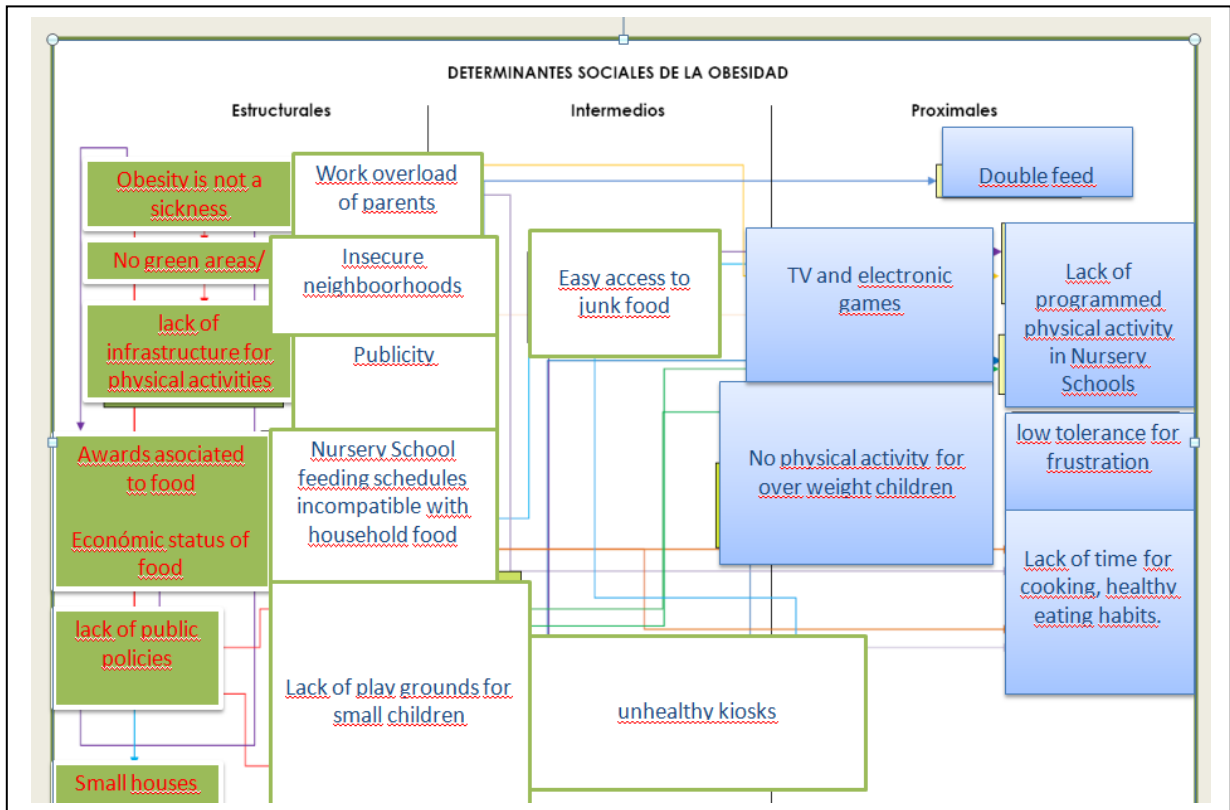
The Valparaíso PARL group considered both micro, as well as macro issues in the design of the Action Plan. The group observed and studied how the majority of the children in the study site function in multiple settings with different people with different criteria (parents, care taker, grandparents), all of which may influence decisions on food consumption and physical activity.

One of the necessary challenges of the PARL group has been that of identifying the core environmental elements that encourage obesogenic behaviours and approaches and actions for establishing active, connected communities. The information collected in the Household Survey clearly highlight that there is no widespread lack of desire to maintain a healthy weight; rather, there is a lack of supportive environments to assist people to eat and act in ways that prevent weight gain.

The challenge of understanding things differently in multiple domains has meant encompassing not only physical characteristics but also those associated with social, cultural and policy environments. The Valparaíso PARL group analysed and identified the root causes of child malnutrition and possible entry points for intervention and shown in figure 1.

Figure 1 Social determinants of malnutrition and possible entry points.
(PARL Group. Valparaíso. December 2011)

DETERMINANTES SOCIALES DE LA OBESIDAD

| Estructurales | Intermedios | Proximales |

- Obesity is not a sickness
- No green areas/
- lack of infrastructure for physical activities
- Awards asociated to food
- Económic status of food
- lack of public policies
- Small houses

- Work overload of parents
- Insecure neighboorhoods
- Publicity
- Nursery School feeding schedules incompatible with household food
- Lack of play grounds for small children

- Easy access to junk food
- TV and electronic games
- No physical activity for over weight children
- unhealthy kiosks

- Double feed
- Lack of programmed physical activity in Nursery Schools
- low tolerance for frustration
- Lack of time for cooking, healthy eating habits.

3.2 What needs *to be done differently* to introduce change and transform existing hierarchical and asymmetrical work models?

Experience to date shows that tackling complex problems and upstream actions require the engagement of many actors. Population health cannot be achieved without collaborative approaches. It requires an active state, but above all, it requires involvement, motivation and commitment of citizens and a wide range of social organizations.

Pridmore and Carr-Hill (2010) carried out a structured literature review of 58 studies and evaluation. They found evidence that interventions to broaden participation and stakeholder participation can change the social determinants and lead to reduce child malnutrition in rural areas. For example, a study in rural Madagascar found that building local support to create demand for improved nutrition and strengthening local political commitment and accountability reduced rates of under nutrition (Rokx, 2006); and in rural Kenya a participatory educational process to facilitate community empowerment and increase access to basic services proved to be cost effective in reducing child under nutrition (Havemann, 2005).

A case study on intersectoral/interagency collaboration and public–private partnerships for fruit and vegetable consumption in Chile used

the social determinants of health (SDH) framework. The study explored the challenges encountered by interagency relationships and across the public–private divide, ranging from the architecture of partnerships to different organisational settings and cultures, as well as interests. The findings, based on interviews with key informants and reviews of documents and reports, showed that partnerships help to overcome the potential conflicts between commercial and social interests. The findings also showed that that despite the potentially common goals, more attention needs to be paid to institutional and organizational interests and arrangements, as well as different ways of implementing interventions and policies at all levels. Balanced participation, focused particularly at the local levels, clear leadership and shared vision is necessary to ensure that each organization's interest is considered while ensuring that population health is safeguarded. Stronger involvement of civil society organizations is needed. (Agurto, 2011)

These crucial aspects have been considered in literature reviews, discussions and reflections on the work plan of the Chilean NICK PARL group. One of the issues raised and discussed has been the responsibility and possible actions that different sectors and local government should be taking to prevent childhood obesity outside of the school setting and outside of school hours. Local governments theoretically could do a great deal to bring positive changes to these other environments. These changes could influence how healthy the food and beverages consumed outside of school are and the extent to which children engage in physical activity, which could depend on the accessibility and maintenance of neighbourhood playgrounds.

These problems can evidently no longer be resolved by a single sector, yet, what seems to be most difficult is that of *"learning to do things differently"* and obtaining a joint commitment and a comprehensive approach to address this complex, multilateral problem which involves such issues as inequity between income levels, cultural food intake patterns, health food alternatives and private sector involvement in increasing availability and quality of fruits and vegetables.

The PARL group has had the challenge of investigating how to manage change, especially when considering transformations in food and drink intake but also in developing collaborative efforts and pathways to assure cross-sector and cross-border work.

"Learning to do things differently" also means engaging diverse sectors in joint policy action at all levels of governance, around *"wicked problems. These* problems have no easy or quick solution becausethey require a deep mind shift, moving from a "silo" to "systems" approach, searching for collaborative learning mechanisms and direct participation mechanisms that can transform existing hierarchical and asymmetric work models and ways of working (Charnes, 2011).

Both of these conceptual considerations refer to what **needs to be understood differently, as well as what needs to be done differently. The** imply **transformative change** and create the need for effective governance and sustainable approaches through multisectoral actions that engage and empower people to tackle their own problems.

3.3. Learning approach: Introducing a _governance lens_ and multisectoral actions to effectively impact obesogenic environments.

> Governance for health is defined as the attempts of governments or other actors to steer communities, countries or groups of countries in the pursuit of health as integral to well-being through both a 'whole-of-government' and a 'whole-of-society' approach.
>
> It positions health and well-being as key features of what constitutes a successful society and a vibrant economy in the 21st century and grounds policies and approaches in values such as human rights and equity.
>
> Governance for health promotes joint action of health and non-health sectors, of public and private actors and of citizens for a common interest. It requires a synergistic set of policies, many of which reside in sectors other than health as well as sectors outside of government, which must be supported by structures and mechanisms that enable collaboration. It gives strong legitimacy to health ministers and ministries and to public health agencies, to help them reach out and perform new roles in shaping policies to promote health and well-being.
>
> (WHO, 2011)

An interesting study on Governance for Health in the 21st century (WHO Regional Office for Europe, 2011) based on a review of case studies shows the imperative of governing through collaboration, citizen engagement, a mixture of regulation and persuasion, through independent agencies and expert bodies and governing through adaptive policies, resilient structures and foresight.

These five dimensions of 'smart' governance for health have been thought-provoking when considering pathways or mechanisms to facilitate deep mind shifts that assure cross sector interventions and a democratic culture. In the NICK Chile experience these dimensions have helped to define more clearly the skills required by the PARL group.

1. **Governing through collaboration: the** NICK study has shown that this means giving due consideration to the process and design of collaboration; the virtuous circle of communication, trust, commitment and understanding; the choice of tools and mechanisms; and transparency and accountability.

2. **Governing through citizen engagement: public policy can no longer just be delivered**. The study shows that successful governance for health requires the involvement and cooperation of citizens and consumers. Participation, transparency and accountability become engines for innovation.

3. **Governing through a mix of regulation and persuasion:** The study shows that traditional hierarchical means of governance are increasingly being complemented by other mechanisms, such as 'soft power' and 'soft law', with expanding influence in an interdependent world. The mechanisms include self-regulation, governance by persuasion, alliances, networks and open methods of coordination as well the new role of citizens in monitoring democracy.

4. **Evidence is critical in a knowledge society: governing through new independent agencies and expert bodies**. The study shows that, as in other fields of governance, independent expert bodies, such as federal agencies, commissions, regulators and auditors, are playing increasingly vital roles in providing evidence, watching ethical boundaries, extending accountability and strengthening democratic governance in health.

5. **Governing through adaptive policies, resilient structures and foresight: 'Wicked problems' have no simple causes or solutions**. The study shows that whole-of-government and whole-of-society approaches to health must be adaptive and must mirror the characteristics of complexity; decentralized decision-making and self-organizing social networking should make it possible for stakeholders to respond quickly to unanticipated events in innovative ways.

The need to build a culture of democracy requires strengthening the very capacities and skills that such processes demand. These dimensions were addressed, drawing upon the HUP Chile Project (Charnes, 2008), through a learning approach oriented to introduce a governance lens and the necessary mind shifts to hopefully assure dialogue and cross sector intervention.

Creating a safe space for learning and collaboration

A 'safe space' implies building trust, striving for inclusiveness and managing power and status differences (for example, between regional and local government officials, between local schoolteachers and authorities). Creating a safe space for learning requires an environment that supports human interaction in a process of "genuine interaction through which human beings listen to each other deeply enough to be changed by what they learn" (Saunders, 1999, p.82).

It means ensuring that all voices can be heard, and focus on issues that really matter to the participants. This sets the stage for the kind of conversations, characterized by learning and humanity that make learning processes possible.

Coordinating meaning and learning for cooperation, participation and accountability

Coordinating meaning and learning does not necessarily mean more communication but more *understanding*. Positive outcomes require that participants emerge from the process with a commitment to coordinated action—an agreement to work towards a common goal. To do this, mutual trust and acceptance must be built in order to acknowledge and legitimate the different meanings given to words, actions and events, so that together they can develop a common language, at least around the issues of common interest.

The concept of what is understood by health, equity, social determinants of obesity, advocacy, and action investigation must be discussed and agreed upon by the different sectors. Only with this more coordinated meaning-making will there be a foundation for coordinated action.

Many authors refer to the need for developing the quality of *'openness'* in the sense that participants open themselves to hearing and reflecting upon what others have to say, to what they themselves are saying, and to the new insight and perspective they may gain as

a result. Enacting the principle of learning by adopting a stance of **inquiry** is another important element of the learning approach. Inquiry involves asking questions to gain understanding.

In *Dialogue and the Art of Thinking Together*, William Isaacs (1999) describes key behaviours or skills that create this kind of interaction as '*listening*—without resistance or imposition; *respecting*—awareness of the integrity of another's position and the impossibility of fully understanding it; and *suspending*—suspension of assumptions, judgment, and certainty'. The nature of the process expressed as openness points them towards learning; it 'is not about pronouncing judgments or affirming power positions; rather, it is about listening for a deeper understanding and awareness of the issues at stake'.

As previously mentioned, the learning approach and the capacity building programme of the PARL Group in Chile draws on experience gained from two previous programmes – the WHO Chile HUP and the subsequent Chile HUP which brough together different groups and sectors and built a common agenda step by step.. The learning process has been tailored to meet the needs of the Valparaiso PARL group and the specific local cultural context in which child obesity develops, considering the political processes that involve a plurality of actors, and that take place in multifaceted and rapidly evolving context.

There is clearly no general, "one-size-fits-all models". The learning approach, on one hand, conforms to hard facts and has a purpose—to seek responses to a very concrete and urgent issue. But on the other hand it is also influenced by the more delicate and elusive chemistry of human relationships (Brahimi, 2006).

The participatory learning process used in the NICK study draws on multiple theories. These theiries include the theory of 'communicative action' developed by Jurgen Habermas, (1981); Hannah Arendt's concept of "representative

thinking" (1968); the theory of how conversation creates reality, developed by the evolutionary biologists Humberto Maturana and Francisco Varela (1987); the theories of the philosopher and educator Paolo Freire (1972) about the capacity of ordinary people to learn and to play a constructive role in shaping the world they live in; and, Fernando Flores (1987) theory of relationship and how conversations and commitments that people engage in can take on purpose and empowerment.

4. The participatory action research learning process: Inquiry-Reflexion-Action-Participation

4.1. Getting it started: Open Space Technology (OST)

Open Space Technology was chosen as the approach to initiate activities and integrate different actors and stakeholders in the NICK Project. The Guide " Open Space Technology: A User's Guide", Owen Harrison (2008) explains that this approach works when the following conditions are present, namely high levels of:

1. *Complexity*, in term of the tasks to be done or outcomes achieved;

2. *Diversity*, in terms of the people involved and/or needed to make any solution work;

3. *Real or potential conflict*, meaning people really care about the central issue or purpose and have different ways or strategies of acting on it

4. *Urgency*, meaning that the time to act was "yesterday".

The challenge of OST is that of creating conditions, through respect and flexibility, to unite groups of enormous diversity in intense discussion, involvement, communication and innovation. It is primarily based on trusting the participants as well the process. The learning groups work with hugely complex issues and little, overt facilitation. The process works mainly on "opening spaces" especially when a large, complex issue needs to be thoroughly reconceptualised and reorganised and when the task is just too big and complicated to be sorted out "from the top" (Owen, H. 2008)

During an Open space gathering the following actions occur:

1. every issue of concern to anybody is set upon the table.
2. all issues are discussed to the extent that anybody cares.
   a full written record of all discussions is kept and belongs to all participants.
3. all issues are ranked and prioritised.
4. critical "focal issues" are isolated and "Next Step" actions are identified for their resolution.

The OST meeting, convened in Valparaíso, had the purpose of inviting different sectors, organizations and actors to become involved in tackling the problem of overweight and obesity in children. Through facilitated intersectoral dialogue they analysed the context in which the problem occurs in Valparaiso, identified keys to understanding new challenges and ways of working locally. The open space meeting was also used to and establish the PARL Group.

The OST Group was attended by members of the local community from the research intervention site: representatives of the different Primary Health Centres and teachers and authorities of Nursery Schools, as well as representatives from the Local Council of Health of Playa Ancha; Authorities from the regional level: Regional Secretariat of MoH, Representatives of the Ministry of Education and Representatives JUNJI (Regional National Board for Day Care Centres), and authorities of the Regional Government (Corporation of Health- Division of Health Promotion); NGO´s, Association of Free Commerce and trade, Network of Maternal breast feeding; and authorities representing the national level: Childhood Obesity Regional Intersectoral Committee of the Ministry of Education and Health.

The different groups were randomly formed and worked on the following questions:

1. Reflecting on your personal and professional experience, identify the elements that make up and facilitate obesogenic environments for children between 2 and 4 years.

2. What can we do together to change the individual, collective and institutional practices (ways of thinking and acting) that perpetuate these obesogenic environments?

Figure 2 shows how participants worked together in the OST meeting for the NICK study

Figure 2 Participants in the OST meeting doing activities to share their understanding of the causes, consequences and solutions to child overweight and obesity.

The different groups carried on in-depth collaborative dialogue and had an intense debate about the determinants underlying the generation of obesity and overweight in children and the difficulties in effective intersectoral work. Obesogenic environments were analysed and an initial attempt was made to classify structural and intermediate social determinants underlying overweight and obesity in Valparaiso.

From this activity the following root causes and problems were agreed upon:

- **Problems related to insufficient physical activity (within the community, family and institutions)**

1. Inadequate space for physical activity (small houses, street insecurity).
2. Insufficient skills / commitment by / as adults responsible for the development of physical activity in families and Nursery Schools.
3. Loss of daily practices of traditional games.

- **Problems related to excessive food and drink intake**

1. Lack of knowledge and understanding of carers in the choice of healthy and safe food and drink.
2. Family, community and institutional beliefs, values and culture that maintain inadequate food and drink intake habits.
3. Lack of knowledge of necessary calorie intake (food types and quality) and daily nutritional needs and requirements of children of responsible adult.

4. Lack of coordination and communication between the Nursery School, Primary Health Centre and the family in relation to the nutritional needs of children.

- **Problems related to the governance of obesogenic environments**

1. Disarticulation of the various intra and intersectoral actors in the network of care for children at national, regional and local levels.
2. Lack of knowledge of the roles and the different projects carried out by regional institutions
3. Lack of knowledge of work and functions of local area networks (Joint Local Health Education Committee).
4. Lack of coordination between institutions.
5. Poor coordination between the School Nurseries and Primary Health Centres

4.2. Implementing and assuring the PARL NICK Group

The PARL Group in Chile was formed by representatives of the participants of the initial OST group. The working process involved monthly cycles each of which included capacity building, situational analysis and cross-sectoral planning, action and reflection. These cycles enabled the teams to design, trial and improve a range of small scale community-based interventions to reduce child malnutrition.

Critical and reflective understanding of child malnutrition was intentioned so as to enable the multidisciplinary groups to develop shared understanding of the causes of overweight and obesity amongst the low income groups in the research site and to plan and take feasible actions aimed to reduce child malnutrition in a sustainable way.

As previously mentioned the PARL process was facilitated and supported by members of the core-research team using a participatory educational process – as proposed by Paulo Freire and others- focused on critical understanding of social reality and the capacity for action.

This process involved the four participatory recursive, simultaneous and continuous phases (Charnes, 2011) shown in figure 3:
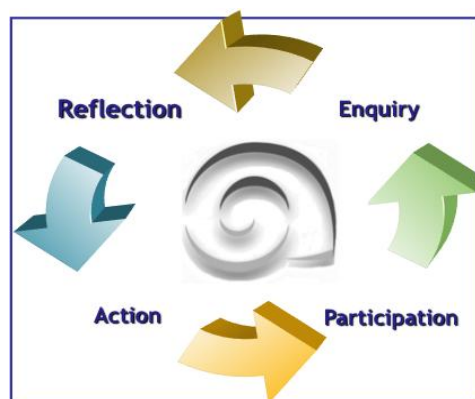
Figure 3 the PARL Process

1. Enquiry: to study the problem 2. Reflection: on the causes and dynamics of child overweight and obesity specifically in the research site. 3. Action-learning: planning and implementation of an agreed action plan and observation to measure the effects 4. Participation - to search for collaborative learning mechanisms and direct participation mechanisms that can transform the existing hierarchical and asymmetric work models (ways of working).

The strategy for implementing the PARL process was designed by all the research team and adapted accordingly by the different research sites. The stages are described as follows:

Step 1. Initial Open Space meeting

Step 2. Constitution of PARL Group: What habits or ways of working do we want to change or transform?

- Participation to search for new ways of working together (collaborative learning mechanisms and direct participation mechanisms) that can transform the existing hierarchical and asymmetric work models) that can bring new solutions and identify opportunities and challenges.

- Capacity building, reflection and action plan: How to constitute and sustain a Multisectoral Learning Community (collaboration, team learning, networking, institutional and sectorial conversations).

Step 3. Reflect, Study and Plan: What needs to be done differently to introduce change?

❖ Critical reflection on inequities in child nutrition in the research site through:

- Systematic and rigorous enquiry to assess the local situation through analysis of findings from the literature reviews, and other documents and records as well as collection and analysis of primary data from SSI and FGDs. Critical analysis what has been tried and what were the lessons learned. *What can be added?*

- Identification of major social determinants and root causes of child malnutrition in the local site. Analysis of promising entry points for intervention. Analysis of pathways/determinants with respect to potential entry points. *Which of the themes are reflections of structural determinants?*

- The PARL group addressed questions such as:

  1. *Which are the main SDH underlying malnutrition in the defined community?*

2. *Which are the main pathways defined?*
3. *What are the potential side effects of eventual change each entry point?*
4. *Possible limitations and sources of resistance to change?*
5. *Does the interventions proposed consider possibilities of replicability, sustainability, scalability, political feasibility, economic feasibility, and technical feasibility?*

- Critical reflexion and strategic multisectoral planning to translate findings into an action plan and introduce a governance lens and multisectoral actions to impact obesogenic environments.

- A stakeholder analysis to identify the important stakeholders (local, regional and national) and strategies to engage them in the Project.   This step is guided by the questions:
    1. *Which sectors should participate?*
    2. *What are the challenges for each one of these actors for public policy on nutrition?*

Step 4: Act

- Design and implementation of action plans to bring about positive change.

- Design of instruments for monitoring of PARL process, as well as the collection of data to document progress and manage change process.

Step 5: Evaluate, Reflect, Study and Re-plan

- Analysis of the data collected and critically reflect on challenges and progress to identify the emerging issues

- Participation to search for new ways of working together and identify new opportunities for improving action in the next cycle of action and reflection
- Re-planning.

Step 6: Act

- Implementation of revised action plans

Step 7: Evaluate, Reflect, Study and Re-plan

- Analysis of the data collected and critically reflect on challenges and progress to identify the emerging issues
- Participation to search for new ways of working together and identify new opportunities for improving action in the next cycle of action and reflection
- Re-planning.

Step 8: Act

- Implementation of revised action plans

Step 9: Evaluate Reflect Study and Re-plan

- Analysis of the data collected and critically reflect on challenges and progress to identify the emerging issues and extract lessons learned for policy development, for scaling up and for improving action in the next cycle of action and reflection
- Participation to search for new ways of working together and identify new opportunities and challenges.
- Re-planning.

4.3.   Keeping it going: Monitoring the learning process of the PARL Group

Assuring continuity and sustainability

In order to address data collection, the Nick Team developed a Data Management Plan to document each phase of the project implementation and to answer the research questions mentioned previously. To complete the situational analysis from the specific study sites, data has been collected through semi-structured interviews and focus group discussions with key informants, as well as from secondary data in the literature that help answer the research questions.

The actions, pathways and mechanisms through which the social determinants of child malnutrition can be changed have been addressed and documented by the PARLgroup. This process and the PAR group workshops have been designed to encourage a more complex, systemic and multisectoral understanding of child malnutrition (its causes and solutions) and enable members to find new and improved ways to interact and work together in their working lives as well a in the PAR group workshops.

In setting up a Project that tackles the complex, "wicked" problems that have been described, it becomes very difficult to predict what will happen. The environment, as well as the sectorial interactions are continuously evolving and changing and small things can have significant and unexpected impacts. Evaluation in these complex environments requires a great deal of flexibility – it needs to take place in 'real time' and simultaneously: the feedback from the evaluation itself serves as an intervention. It is difficult to foresee replicable solutions, as solutions are often context specific. Evaluation in a complex environment requires identification of *principles that are transferable* to other contexts, where the actual intervention may look quite different.

In this context it became important to process data to understand changes in the thinking, interaction and working of members of the PAR group.

Learning History[*]: a tool to highlight important learning experiences.

The Learning History tool documents the questions of *how* learning happens, and *why* it happens in particular settings. It is developed with empirical data and evidence of what learning did or did not take place, capturing both cognitive (what people are thinking and in what ways their thinking changes) and behavioural (what people are doing and in what ways their actions change) data.

The term "learning history" was initially chosen to describe the approach and a set of techniques for eliciting, capturing, documenting and communicating learning in organizations (Roth and Kleiner, 1997).

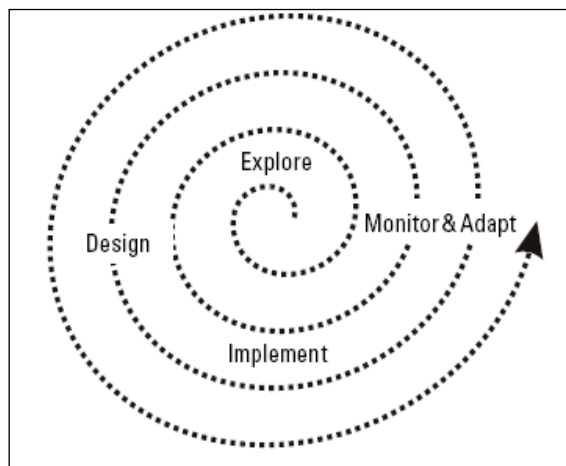The flow of the monitoring, evaluation and learning process is illustrated in figure 4.

Figure 4 Monitoring of the earning process during the PARL cycle
(Source: "Democratic Dialogues" Democratic Dialogue:
A Handbook for Practitioners p.53)

The learning assessment process is an effort to develop the capability of the people in the change process to evaluate their program and its progress, and to create materials that will help diffuse their learning to others. It is characterized by the development of a feedback cycle (Argyris, 1993) that leads to knowledge that represents both the "know-

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[*] The learning history interviews, the primary method for data collection, draw upon techniques from ethnography (Spradley, 1979; Sanday, 1979; Van Maanen, 1979), and oral history (Yow, 1994) and action research, learning and process consultation (Argyris, 1990, 1991; Schein, 1987) in promoting reflection and inquiry.

Ethnography provides the science and art of cultural investigation-the systematic approach of participant observation, interviewing, and archival research. The tradition of oral historians provides for a comfortable process honouring the story of the narrator. Oral history is a rich data collection method providing natural descriptions of complex events in the voice of a participating narrator. Action research adds focused inquiry skills and effective methods for developing people's capacities to reflect upon and assess the results of their efforts. The transcripts from the reflective conversational interviews, along with other materials, create a rich database, which must then be distilled into a coherent document.

how" and "know why" that guides people's actions so that they can consistently produce the results they set out to achieve.

A key goal of learning history work is to create **"reflectionable knowledge"** (Käufer, 1999) which leads to meaningful and significant reflection. It provides a context, which makes it easy to assimilate and think about new information. It makes explicit the multiple mental models, which operate, in a given social setting. Reflectionable knowledge promotes further inquiry into these thought processes and into the differences between various participants' assumptions.

A "learning history" is a *document* — or a series of documents, — *that is disseminated* in a deliberately structured manner. The documents, and the dissemination, are both designed to help groups become better aware of their own learning and change efforts. It captures the stories that participants tell about learning and change efforts and reflects them back to the group and others. Researchers seek to help participants assess and evaluate their efforts.

Participants' assessments and evaluations of learning efforts are developed by conducting reflective individual and group interview conversations. The learning historian asks participants to describe what has been accomplished and consider what role they and others have had in those and other achievements. These interviews are recorded so that participants' narrative can be later used as the data for documenting the learning process. Each element in a learning history process - interviewing, observing, analysing, writing, editing, circulating drafts, following up and conducting feedback workshops - is intended to broaden and deepen learning throughout the PAR group by providing a forum for reflecting on learning and substantiating results. The learning history process provides an on-going forum for collaborative reflection.

5. Theoretical frameworks and models for action of PARL group: Challenges in achieving Mind shifts

In designing the actions of the PARL group we have reflected upon how change can be introduced in the a way that is safe and practical to implement and once this change has been introduced how can we sustain new behaviour and habits so that it becomes part of the routine rather than the exception. As has been documented, the fact of knowing what to do does not assure change –in eating habits, as well as in intersectoral action.

Several theoretical frameworks and models for action are the founding principles underlying the PARL Group. These range from the framework and reflections of the *Commission on Social Determinants of Health (CSDH)* (Irvin, 2010) (Solar, 2010) to models which outline a continuum of approaches from downstream, individual focused actions -such as education and skills provision- through to upstream policy and environmental change and the rationale underlying 'upstream' socio-environmental approaches to obesity prevention (Keleher and McDougall 2008).

The Reports of the CSDH have made it perfectly clear that policies for health equity involve very different sectors with very different core tasks and very different scientific traditions, and have framed heath as a social phenomenon emphasizing more broadly

health as a topic of social justice, as well as the experience and knowledge that successful health policy to address SDH cannot adopt a "one-size-fits-all character".

It also draws on health promotion actions and on several cross-disciplinary theories and models such as the *Stages of Change Model* (Prochaska, Di Clemente, 1983.) and *Social Learning Theory* (Nutbeam and Harris, 1999).

The Stages of Change theory was developed to explain the different stages of change, which appear to be most common in behaviour change processes. Based on the assumptions that behaviour change is an on-going process, not an event, and that individuals have varying levels of motivation or readiness to change, the theory identifies five stages of change shown in model. This theory provides a useful way of thinking about the types of persuasion, information and supports people require to move through the change process. (See figure 5)

Social Learning Theory identifies the importance of social norms and cues, environmental influences, and self-confidence (self-efficacy) on health behaviour. The theory suggests that health promoters act as 'change agents', facilitating change through modification of the social environment and the development of skills and capacities that enable individuals to make healthy changes.
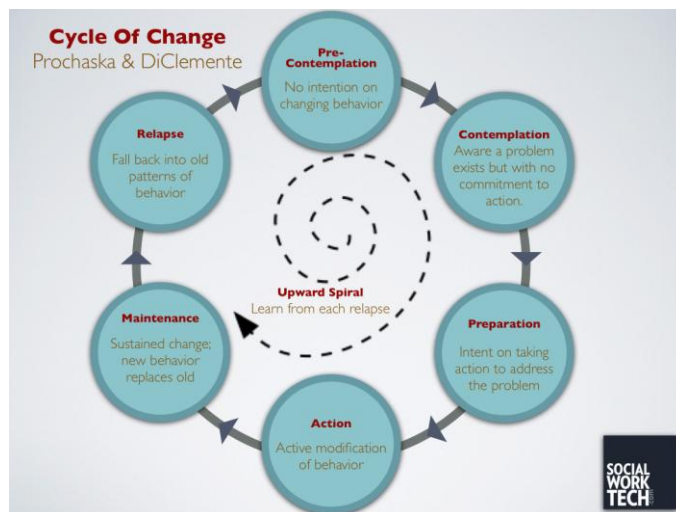

Figure 5 Stages in behaviour change

We also draw on the ways in which psychology can give *complexity theory* a practical dimension and impact the management of complex processes. This can take the form, for instance, of certain metaphors used to describe the project, the stories and narratives the participants tell about it and the perspectives that are continuously constructed in order to solve the daily problems (Gergen, 1998,1999).

Understanding and impacting the obesity pandemic –as has been said- a complex wicked problem, requires new skills and a high level of systems thinking and approaches which

consider the system as a whole, interactions between different elements and possibilities for intervention.

> In complex systems, 'understanding the system as a whole' may include acknowledging the extent of one's ignorance and one's limited grasp of the implications of nonlinear relations within the system.
>
> WHO, 2011.p.65

The PARL group draws also on the experience of the Healthy Urbanization Project (Charnes, 2011) carried out in Chile between 2006 and 2009 that considered actions based on *constructionist theory* and practice that locates the source of
meaning, value, and action in the relational process. Intersectoral learning communities are formed through shared constructions and effective action.

In the building capacity process the HUP draws from   the organizational learning model (Senge, 1983, 2004, 2008; Argyris, 1974,1991, Schön, 1991), which considers five disciplines of the learning organization consistent with complex systems:

1. Systems thinking: a conceptual framework to understand and make patterns clear and anticipate change. The basis of integrated, forward-looking analysis, such as foresight and anticipatory governance, health impact assessments. Being capable of comparing the health consequences of options in policy development.

2. Personal mastery works to continually clarify and deepen personal vision.

3. Mental models works toward scrutinizing assumptions that are deeply embedded and require turning the mirror inward and examining what we see.

4. Building shared vision requires the skills of finding shared scenarios of the future that foster genuine commitment and enrolment.

5. Team learning, which is vital because teams, not individuals, are the fundamental learning unit for the new challenges.

The learning process required by the PARL Group to make deep "shift in mental models"[2]— is translated into collective learning processes and action and expressed in new thinking patterns, relationships, networks and behaviours. As we have previously mentioned these actions should be orientated towards the creation of conditions for *thinking differently, as opposed to simply doing something differently*, ensuring the application of new skills and a high level of systems thinking and approaches which consider the system as a whole, interactions between different elements and possibilities for intervention and regular platforms for discussion, dialogue and problem-solving with other sectors so as to engage and become acquainted with a wide variety of viewpoints in multistakeholder deliberations.

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[2] The term 'mental models' comes from the field of organizational learning, in which there has been much study of the use of learning as a tool for organizational change. Peter Senge (1983, 2004, 2008), William Isaacs (1999), Chris Argyris (1974,1990, 1993), and Donald Schön (1991).

Systems' thinking offers a framework for observing and understanding an organisation's complex processes (Campbell, 2000). A central idea of systemic thought is that people and sub-systems (e.g. groups) operate based on their interpretation of their contexts, in other words of the meaning of what is happening around them (Bateson, 2000). Each part of a system will act in the way it thinks will preserve its own identity and its continued position within the system. Everyone works according to what they understand to be the premises for their participation.

Another useful insight of systems thinking is that the parts of a system are interconnected in the sense that if there are changes in one part of the system, there must be a change in the whole system's way of functioning, in order to maintain the link between the sub-system and the larger system.

When a project is regarded as a system, it is impossible to completely separate the individual's or institutional behavioural patterns from the larger system's mode of function. When there is a wish for change, the PARL group with knowledge of systemic thought, will reflect on his own role in the context of the project.

Each participant's behaviour and position, within a system is perceived by the others, as a form of feedback that can be used to interpret the current situation. No form of behaviour or action is completely innocent; all actions contribute to future definitions of what is possible or impossible to do.

The PARL group is conceived as an intersection of different sub-systems (regional, local organisations, health, educational departments, etc.) that develops the ability to build connections between different interests. One of the main goals of the participants of the PARL Group is that of conceiving the NICK project's overall purpose as the primary context for those involved, as opposed to their immediate organizational/sector self-interest.

The iceberg is one analogy frequently used to introduce systems thinking. It has been designed to help an individual or group discover the patterns of behaviour, supporting structures, and mental models that underlie a particular event. This model highlights the point that visible and invisible changes are connected and often interdependent. At the deepest level, shifts in feelings and perceptions open up people to the possibility of change.

The Iceberg Model, shown in the following figure, provides a visual representation of the explanation of how deep changes in mental models, feelings and perceptions that take place 'below the waterline' provide the foundation for changes that are more concrete and visible. Individual changes are translated into collective learning processes and action and expressed in new thinking patterns, relationships, networks and behaviour.
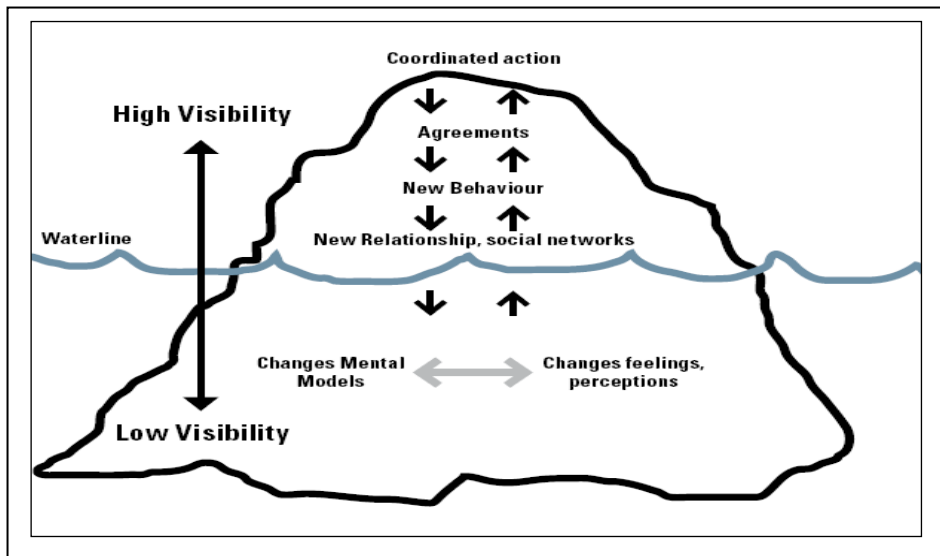
Figure 6 The Iceberg Model: Levels of Change
(*Source*: Based on the model of Katrin Käufer, adapted from Otto Scharmer, 1999, pp. 36–60).

In the PARL group, through dialogue and discussion, the groups began to recognize their mental models, feelings and perceptions of the other. Each person/institution or sector became more able to listen, to pay attention to facts they would rather ignore and to modify their own pictures of reality, and open up to new ways of understanding, learning and acting. The image of an iceberg suggests the idea that often the visible characteristics of a determined phenomenon are only a small portion of its totality, and that it is important to be aware of those aspects we cannot readily see.

The dynamics of how *people come together to talk about what actually happens in their sector implies* opening up to different versions of reality and using the knowledge associated with them to coordinate and navigate (Boscolo et. al., 1992). In practice this means creating new understandings, explanations and stories, where contradictions do not equal problems in creating new knowledge and action.

The meaning that each sector or stakeholder gives to the problem (project) –to the childhood obesity- determines what we think is the obvious thing to do or say or "what has always been done", which can be effective in improving individual lifestyles (downstream, proximate factors) but ineffective in the causal links between the upstream social factors (e.g. neighbourhood characteristics, educational attainment, broader environmental factors) determining the obesity epidemic.   The challenge is a *mental shift*, in changing the meaning we assign to the problem situation, as well as the actions that seem obvious and natural.

In this context it is important to ensure that the varying opinions from the different stakeholders are counterbalanced on a continuous basis. As we mentioned previously, an action plan should be designed to ensure coordination on the level of meaning (Amtoft, and Vestergaard, 2003).

Lastly, the notion of the *"reflective practitioner"* represents an alternative standpoint in relation to what has been considered enquiry, reflection and creation of new knowledge (Schön, 2001). In the PARL Group participants are conceived as action researchers, who together with team members and other stakeholders, critically reflect on the feedback derived from the activities designed and implemented, and on the basis of this reflection determine the next course of action.

Argyris and Schon (1974) made a distinction between single-loop learning and double-loop learning. The "fix-it" model is a form of single-loop learning: A solution is developed to correct the presenting problem, but the underlying causes or determinants of the problem are neither recognized nor addressed. Single-loop learning is largely ineffective in contributing to long- term solutions to problems because the underlying assumptions that reinforce the ineffective actions are never examined. Single-loop learning seems to be present when goals, values, frameworks and, to a significant extent, strategies are taken for granted. The emphasis is on 'techniques and making techniques more efficient'.
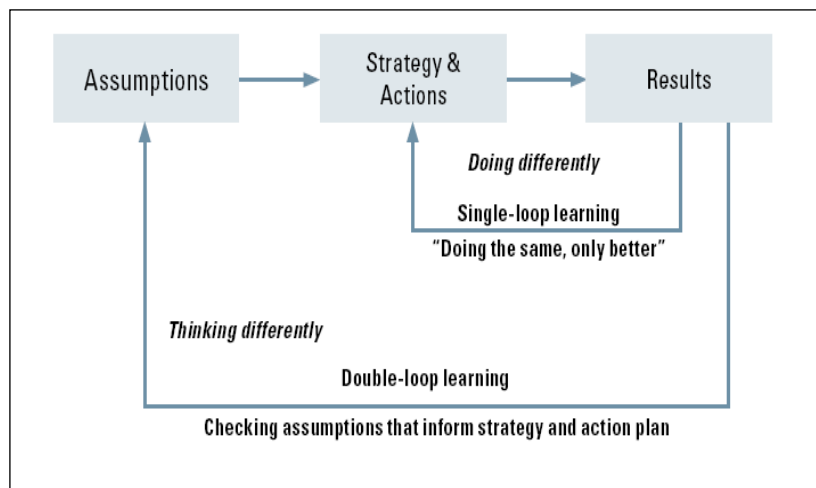

Figure 6 Double loop Learning (Argyris, 1993)
Source: UNDP. (2006) Democratic Dialogue – A Handbook for Practitioners, CIDA,
International IDEA, the GS/OAS and UNDP, p.145.

Double-loop learning, on the other hand, holds the potential for real change because it examines these underlying assumptions, or theories-in-use, as part of the problem-solving process. Analysis within the framework of reflective practice is designed to lead to double-loop learning. At the completion of this phase, there is greater understanding—incomplete though it may be—of "espoused theories" and theories- in-use. With this knowledge in hand, the research practitioner begins the next stage of inquiry: reconceptualization. Underlying the reflective process is the assumption that useful knowledge addresses specific needs of the individual or constituency; it is experiential knowledge, practitioner knowledge, knowledge of craft, knowledge of personal action theories, and what Schön (1983) calls "knowing-in-action".

Because the primary purpose in reflective practice is improved performance, the learning process begins with examining practice. The typical relationship between theory and practice is inverted. In the traditional model, theory or public knowledge is the means to improve practice; in the reflective model, attention to practice is the means toward the development and refinement of theory—specifically, personal action theory. Within the

reflective process, study of formal theory functions as an important resource in the developmental process, but it is not an end in itself.

In the reflective practice model, the link between theory and practice is explicit—not implicit as in the traditional approach—and the developmental process begins with practice. If we wish to develop new and better methods of practice, we begin by examining the behaviour/problem we want to improve.

The central knowledge questions are much broader than in the traditional approach: "What do we do, and why do we do it?" "How do our knowledge, our understanding, our personal theoretical framework affect the problem situation?" "Given new knowledge, what will we do differently?" In the reflective approach, several kinds of knowledge are integrated. Theory and practice are integral and central considerations, and theory includes ideas derived both from formal research and from personal experience. Attention to public knowledge and formal theory is not lost or diminished, but practice— specifically, personal practice—assumes a far greater importance.

The concept of cognition also expands from a narrow emphasis on information gathering or recall to the development of analytic and conceptual skills that enable individuals and groups to create knowledge needed to respond to the diverse demands of practice. Finally, in the reflective mode, learning is a social process, whereas, in the traditional mode, it is individual. In the usual process, learners are addressed as isolated individuals learning in parallel but not interrelated ways. In reflective practice, learning is cooperatively based. Collaboration extends beyond the learner-facilitator relationship to include all of the individuals in an interdependent learning process.

Interventions to change the social determinants to create a more enabling environment for good child nutrition go, without doubt, beyond "single loop learning". The double loop learning cycle, implies a process of deep reflection that questions underlying social, economic and environmental assumptions and values at the household, municipal and institutional level that lead to child malnutrition. It involves re-examining individual and collective beliefs and conceptions and thinking beyond the definition of the problem, strategy and desired results. *It aimsat thinking differently, as opposed to simply doing something differently and* is the result of learning to operate differently as a Project. It responds to ´why questions´.

In the NICK project we could speak of an effective double-loop learning cycle, when a multisectoral group overcomes the 'silo mentality' (for example, the sectorial mentality of health professionals to apply biomedical solutions) and develop the capacity to work together to build their leadership and advocacy skills and to implement and evaluate cross-disciplinary, multi-sector actions; appraising methodological diversity or, involving others and establishing partnerships in meaningful relations, understanding multisectoral work as joint ownership. Double loop learning is implicit in actions or initiatives that recognize malnutrition as a responsibility of all sectors and consider how to influence other public policies that have an impact on malnutrition, in collaborative learning initiatives with other stakeholders.

It is the basis for acknowledging the dynamics of social structure and understanding the needs and tensions in promoting citizen participation and empowerment. It is the basis for understanding the aims and underlying principles of the NICK project in society and the

lives of individuals and families (knowledge, values and attitudes). It is the basis for, as well as critical reflection on the actions, pathways and mechanisms through which broadening community and stakeholder participation can change the social determinants and reduce child malnutrition in a sustainable way. It also involves a new understanding and the capacity to navigate through the complexities and actions of a participatory, action, reflection group and new and changing institutional vision.

The monthly activities agree by the PARL group are listed below:

- Focus on social determinants of malnutrition
- Enhance partnership: recruit participants from diverse backgrounds and with diverse experiences.
- Document and share information
- Follow-up commitments of Work Plan
- Build community capacity: Increase understanding of a community's needs and assets.
- Interchange experience and the use of multiple approaches proposed by representatives from different sectors
- Revise personal and collective beliefs and assumptions in relation to overweight and obesity
- Revise public policies and health systems.
- Move to action: Engage new issues considering shared responsibility for managing or developing them.
- Share or develop the necessary resources for action and problem solving.
- Monitor and evaluate activities
- Maintain your momentum.
- Minimize duplication of effort and services.

6. Achievements

6.1 Monthly action and reflection of the NICK PARL group

The development of collaborative learning mechanisms and direct participation tools that transform existing hierarchical and asymmetric work models and ways of working) has meant the effort of constructing an agenda and goals of mutual benefit to all the sectors involved in the Nick Chile Project. Collaborative partnerships have been formed for many reasons, including helping members of the group learn and adopt new skills, gain access to necessary resources, share financial benefits, exchange viewpoints with a broad range of individuals and organizations from the community, and respond to the changing needs of a community. It also has involved improving chances of making meaningful changes in the community conditions, gaining community members trust.

As has been pointed out, introducing a governance lens and promoting multisectoral action, grounded on inclusion and openness, broad-based collaborative partnership based on societal goals, that address social determinants of health, have had varying effects on different members of a community. Social relationships are complex and require the development of methods and processes of collaboration -the ways partners work together to create change and the degree to which all partners are engaged in the partnership's activities (Brennan, et al., 2008).

As previously mentioned, local nursery school teachers and authorities from the schools, regional and local health and education authorities and professionals from the local health centres formed the PARL multisectoral NICK team. At its initial stage there was irregular attendance of parents and representatives of food market traders and members of the fishing industry. The monthly PARL group meeting was conceived as the laboratory for questioning personal and collective assumptions about child obesity, for developing collaborative learning and searching for new ways of working together; for developing critical and systematic enquiry to asses the local situation and identify the major social determinants and root causes of the problem. The participants reflected on their own beliefs, experience and expectations and expressed them in guided activities.

> In our Nursery School we have different projects focused at introducing healthy lifestyles and physical activity, which in one way or another introduces new knowledge and habits for healthy eating.   But our biggest problem is still the family that because of different various reasons do not apply the teachings and feeding schedules that are taught. Of course, television, shops, supermarkets etc., don´t help and children usually prefer junk food to healthy products and mothers sometimes because of lack of money and misinformation meet the demands of their children believing that they are showing love, not realizing the damage they are causing.   Nursery School Teacher. June 2012.

> In my personal environment, my family and I know the damage of poor nutrition and lack of physical activity, however it is difficult to change certain habits that are part of our culture and history… in the environment around us it is easier to find junk food than fruits and vegetables because they are less durable. Also in our community (población) it is difficult to do physical activity, without fear of being assaulted, finding someone fighting or selling drugs in the corner.   Mother of nursery school child. June 2012.

> To end my reflection, I think the general population still does not understand that obesity is a disease. Unfortunately being obese does not generate pain or fever.... But I do believe that if the community begins to understand the risk factors of overweight and obesity for other diseases -which are the first cause of death in Chile- they may begin to take necessary measures and react, ensuring a healthier and better quality of life.
> Nutritionist JUNJ. June 2012.

As part of the multisectoral planning activities the PARL group also carried out a stakeholder analysis in which they identified other important stakeholders and designed strategies to get them involved, develop common goals and joint policy action. The main stakeholder groups that were identified in the Plan of Action were the following:

1. Preschool children attending day care centres of the research intervention site.
2. Parents of the preschool and school-age children.

3. Government institutions (Ministry of Health-Regional Secretariat of Health-, Ministry of Education - Regional Secretariat of Education, Representatives of Local Government, of the National Board for Day Care Centres-JUNJI, as well as the National Board for School assistance -JUNAEB).
4. NGOs in research intervention site.
5. Food industry (representatives of Association of Street Markets and Artisan Fishermen of Valparaiso).
6. Community organizations (neighbourhood groups and councils, local health council, local sports groups).
7. Local religious groups.
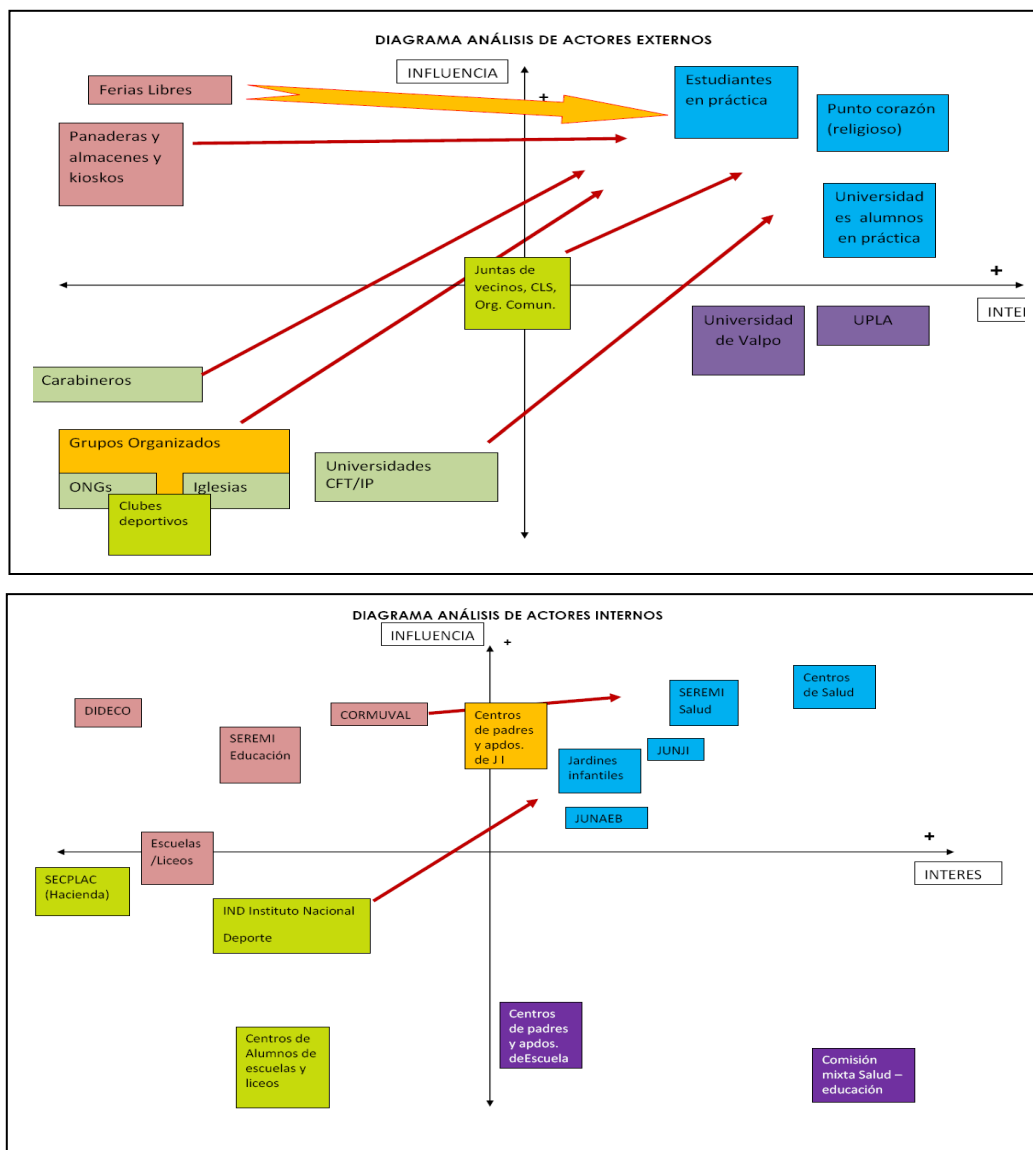8. Local police authorities.

Figure 7 Stakeholder analysis of internal and external actors. PARL group. Oct 2012
Many of the PARL workshop activities were aimed, as mentioned, at shifting the balance from 'intersectoral action for health to intersectoral action for shared societal goals'. These activities were translated into an Action Plan described int eh next section.

6.2   The PARL group Action Plan

The aim of this Action Plan was to contribute to modifying the obesogenic environment in the research intervention site (Playa Ancha Hill) in which children between 2 to 4 years olds live and grow through

(i)   Improving governance to develop effective policies and strategies addressing the problems identified in the research site - by strengthening the commitment of regional and local municipal government and local food providers to improve the availability and identification of healthy foods and by strengthening intersectoral networking.

(ii)   assisting the JUNJI Nursery Schools (National Board for Day Care Centre's- Bambi, Capullito, Swallow Flipper and Tinkerbelle) to implement small scale initiatives that tackle the social determinants of child overweight and obesity facilitating the development of healthier neighbourhoods.

The objectives of the Plan were to

i.   Improve governance at the municipal and local levels by engaging in the debate on child overweight and obesity in the technical and political agenda at the municipal level and establishing / strengthening intersectoral networks, actions and policies to help tackle the problem.

ii.   Raise awareness about the importance of healthy eating and physical activity in preventing childhood over weight and obesity through media and social marketing campaigns, using multiple channels and consistent messages; and by motivating community participation of families and preschool children in activities to disseminate knowledge and practices about healthy eating and physical activity.

iii. Control and evaluate food-intake of children in Nursery Schools the intervention site through systematically recording information on the quantity and quality of food produced in the kitchens, on the presentation and on food intake of the 2 to 4 years old during the lunch period.

iv.   Promote and encourage policies and practices that build physical activity and healthy eating habits activity into daily routines in the Nursery Schools and households.

v.   To activate health care professionals and improve the skills of staff of the Primary Health Centres to effectively deal with and educate families on children's eating habits and physical activity.

The strategies to reach each objective are as follows:

Strategies to achieve objective 1

1.   Advocacy with local and regional authorities, with intersectoral technical teams and with local food providers to promote their commitment to improve the availability and identification of healthy foods.

2.   Advocacy orientated to the implementation of fiscal policies and local ordinances to discourage the consumption of calorie-dense, nutrient-poor foods and beverages (e.g. taxes, incentives).

3. Integration of actions on healthy food and physical activities coordinated by the Health Promotion Plan of the Municipal Council of Valparaíso that apply directly to the Nurseries and their child environments.

4. Effective management of intersectoral resources to recuperate and enable the public parks near the nurseries.

5. Coordination of actions with local food providers to improve community access and consumption of healthy food.

6. Increase community access to healthy food through local grocery stores and "corner stores".

Strategies to achieve objective 2

1. Together with the school community (children, parents and educators) generate a shared image of the NICK project. (Leading to concrete projects and images associated with health promotion –healthy eating and physical activity.

2. *Social activities and Interventions:* Competitions of healthy recipes in Nurseries; development of community vegetable gardens in each Nursery: installation of seedbeds. (Leading to modified school and community behaviours and habits aimed at healthier everyday practices.)

3. *Social marketing:* Material prepared with the school community for Primary health Centres, community radios, local food shops, headquarters of neighbourhood councils, etc. (Leading to participation of the school community in activities that promote healthy eating and physical activity and reach a broader population and a large segment of the population.)

Strategies to achieve objective 3

1. Observe the organoleptic characteristics of the food served to children. (Providing evidence about the quality and quantity of meals served to children.)

2. Compare the menus and food preparation in the Nursery and those indicated by the JUNJI (National Board for Day Care Centres). (Providing evidence about the quality and quantity of meals served to children.)

Strategies to achieve objective 4

1. Keep weekly records to monitor the planning and implementation of physical and educational activities related to the intake of food and nutrition that the children receive during their day in the nurseries. (Including the use of educational materials for healthy feeding and physical activity; daily planning and implementation of educational activities on food and nutrition; weekly planning and execution of activities related to the intake of healthy food with less acceptability.

2. Engage the Nursery school teachers, other members of the school teams and families in a critical reflexive analysis of their everyday practices and revise and implement daily activities related to health eating education and physical activities with the children.

3. Create a PARL group with the school community that can revise information and carry out a critical reflexive analysis of on-going educational activities that promote healthy eating habits and physical activity.

Strategies to achieve objective 5

1. Revise the use of existing educational materials available in the Primary Care Centres and design a training program presenting physical activity and healthy eating. (Leading to upgrading of educational materials, monitoring tools and participatory methodology for on-going training for families and caretakers.

2. Engage members of Primary Health Centre and families and caretakers of children in a critical -reflexive analysis of their everyday practices in relation to healthy eating education - feeding, family food system, family planning and early attachment, as well as production, storage and preparation of healthy and safe food. (Leading to the effective implementation of existing educational programmes and participatory-reflective facilitation methods with families attending Primary Health Centres in the intervention site; and committed and informed PHC teams, caretakers and families questioning assumptions and beliefs and introducing new practices in managing family food system

3. Encourage and increase coordination with "Municipal Intersectoral Committee for Childhood Obesity" and other sectors to obtain competent technical support for training programmes.

4. Keep records and register existing educational materials used to encourage and educate families in healthy eating habits physical activity

5. Elaboration and implementation of a diagnostic instrument to assess learning needs of PHC staff and family members.

6. Conduct a participatory assessment session to detect and assess learning needs of educational agents of Primary Health Centres, as well the learning needs of family members and caregivers of children.

7. Definition of the contents of training programme based on the issues that emerge in participatory assessment sessions and issues that the PHC team wish to enhance related to food, family food systems, breeding and caring.

8. Create a PARL group with the PHC that revise information and carry out a critical reflexive analysis of on-going educational activities that promote eating habits and physical activity.

9. Design and implement a monitoring and evaluation system of training programme and learning sessions.

7. Conclusions: Challenges and constraints

7.1. Governance and Policy Strategy

What is a policy strategy? It means:

- Identifying strategies that have community-wide impact on childhood obesity rates
- Feasibility supported by the community, sustainable, evidence-informed and also has an impact.
- A strategy is high-dose if many people in the community change their lifestyle in a significant way as a result of its implementation.

What does it mean to expand Obesity Prevention from Program to Policy?

- Shift in perception of obesity as an individual behavioral problem to understanding the community dimensions
- Support policy strategies to:
  - Improve access to healthy foods & physical activity
  - Improve school & community environments
  - Make healthy eating & physical activity easier

Experience to date shows that tackling complex problems and upstream actions require the engagement of many actors. This means promoting the development of sustainable multi-sectoral "upstream" food policies based on the principles of action at the local level.

The strategic shift from individual to structural determinants in relation to food and nutrition allows broad coalition-building and broad focus on the political, social and environmental determinants of health. Population health cannot be achieved without collaborative approaches; it requires an active state, but, above all, it requires the involvement, motivation and commitment of citizens and a wide range of social organizations. Correcting nutritional policy requires knowledge of how systems work and communities need to understand how the legislature decides to allocate money. Social policy should address upstream factors that affect health through these complex causal pathways over potentially long time period.

Malnutrition is a fundamentally crosscutting, multisectoral issue that demands horizontal and vertical coherence of planning and action – both across sectors and within these sectors (especially in the context of decentralised governance). All of this must be backed by strengthened capacity and financing of individuals (nutrition campaigns, programme managers, frontline workers), the organisations in which they work, and national institutions.

In approaching complex long-term problems such as malnutrition and SDH, policy makers and technical teams have an understandable sense of urgency to deliver quick results. In

such circumstances the natural impulse is to propose solutions to the visible symptoms rather than devise a longer-term initiative to address its underlying causes.

Such an approach takes more time than a 'quick fix', but it offers greater hope of producing sustainable results that address the current problem *and* build social capacity to deal with future challenges when they arise.

But this is not easy. Experience has shown us that one of the most common barriers to producing sustainable results seems to be politics. We need to learn to deal and navigate within political agendas in one way or another, interact with bureaucratic values and structures of power that dominate society and that can prove to be quite disempowering. This is still an on-going challenge.

This significant transformation in the "way of understanding and doing" and implementing policies constitutes a critical factor for significant structural changes. In this perspective it is essential to have a long-term institutional commitment that ensures accumulation, permanence and continuity of the actions taken.

In order to formulate health policies based on social determinants, experience indicates that it is necessary to have political support at the highest level, structured processes for collaboration with all sectors and mechanisms of local and national financial contribution, from the health sector as well as other sectors.

Perhaps one the most difficult challenges of the PARL Group has been that of visualizing the health effects of most social factors and interventions, particularly those that are "upstream" health determinants. In developing the knowledge and pathways of the PARL group we observe a tendency to take decisions basically from intuitive knowledge of actions and mechanisms but that are difficult to translate into effective, efficient interventions.   Often it has been found that the obstacle to scaling up promising models is lack of systematic knowledge and political will.

The great institutional task in Chile to ensure sustainable change processes such as those proposed by the NICK Chile Project, which consider the reality of different sectors and the real needs of communities require municipalities, local and regional government teams with authority and commitment to implement public policies in local spaces.

The NICK Chile Project privileged micro level policy environment interventions - referred to the 'settings of daily life', this is, school communities, family, local primary health centres, homes and streets. But did not foresee the intervention in macro level policy environment, such as permitting junk food advertising during children's television-viewing times or issues related to integrated urban planning and transport systems that need to be adapted and managed at micro levels.

This issue fundamentally seems to concern how the NICK team understands its political role in an undertaking that aims to leverage policy action and bring concrete measurable results rapidly but at the same time acknowledge the limitations it has (timing, funding, training team).

This remains a pending reflection for NICK team members.

7.2. Building community partnership

Involving the community into the decision-making process is also critical for ensuring that decisions concerning community health are just and right for all, not only those in charge. People in communities know what their problems are, and researchers and policy makers can learn from the experiences of community members by talking with them and involving them in solution finding.

Community involvement is also the basis for acknowledging and understanding the needs and tensions in promoting citizen participation and empowerment. It also means understanding the aims and underlying principles of the NICK project in society and the lives of individuals and families (knowledge, values and attitudes); as well as critical reflection on the actions, pathways and mechanisms through which broadening community and stakeholder participation can change the social determinants and reduce child malnutrition in a sustainable way.

Communities have been defined or characterized in a number of ways, including as groups of people who live in a particular geographic area, have some level of social interaction, share a sense of belonging, or share common political and social responsibilities. Each community has its own set of structures and norms that govern interactions among its members. A person may be part of many overlapping communities, some of which influence access to social resources more than others. As we have seen in Playa Ancha, a community living in a geographically defined area that is economically depressed has less access to affordable healthy food options (e.g., grocery stores or supermarkets).

Although the Chilean PARL Group carried out a general stakeholder analysis, a more in depth analysis to define the community of the research site was required to consider ways to meaningfully involve these diverse groups of community leaders (e.g. clergy, local police authorities, health care providers, school teachers, fishing and small trade groups) and community members (caretakers, families) in tackling

the problems of malnutrition. Many unanswered questions remained such as: Are there social or cultural ties that link community members? What are some shared characteristics of the community? In what ways can community leaders and local food providers improve the availability and identification of healthy foods? What advantage or significance would this involvement have for them?

It would have been interesting and more effective to establish an on-going formal strategy to establish guiding principles for partnership interaction. These principles should consider how partners agree to interact within the partnership and how information is shared within the partnership and with those outside the group. To sustain the partnership, it would have been useful to revisit and modify the principles as new partners joined the group and as part of the social marketing and social mobilization programme.

7.3. The PARL Model of Change

In the NICK Chile project we observe an incipient double-loop learning cycle. The PARL group is conformed as a multisectoral group that begins to overcome the 'silo mentality' (for example, the sectorial mentality of health professionals) and develops the capacity to work together with other sectors to build their leadership and advocacy skills and to implement and evaluate cross-disciplinary, multi-sector actions. There is appraisal of methodological diversity -involving others and establishing partnerships in meaningful relations, understanding multisectoral work as joint ownership. Double loop learning is implicit in the actions or initiatives that recognize malnutrition as a responsibility of all sectors and consider how to influence other public policies that have an impact on malnutrition in collaborative learning initiatives with other stakeholders.

Although insufficient in establishing and consolidating many of the new skills the PARL Group has emphasized through different capacity building activities to achieve specific goals: the building up of essential collaborative skills, the building of trust among the different sectors, the appropriate framing of interdependent policy goals and an Action Plan that considers different scenarios.

The training model was intended to question and transform existing knowledge into new ways of understanding and doing things and in specific changes in behaviour and attitudes toward child malnutrition.

All the information produced by the PARL group was a source of learning and action. It is important to note that this type of training has an impact on organizational change processes. It is pointless for municipalities and local and regional teams to spend resources on action-oriented programmes without being able to introduce changes in the ways they are working in their institutions.

Experience also indicates that in order to sustain change the learning model of the PARL capacity building programme should be one in which learning is constant and monitored. The learning process required to make a deep "shift in mental models" should be translated into collective learning processes and actions expressed in new thinking patterns, relationships, networks and behaviours. These are the necessary conditions for *thinking differently, as opposed to simply doing something differently.* (Iceberg Model and Double loop learning, Charnes, 2010).

The curriculum should guarantee the capacities and skills that the PARL Group needs for managing complexity. It has been important, among other things, to develop a programme that considers:

1. Long term learning objectives
2. Assessing real time availability of the participants
3. Determining how and when learning will be measured
4. Determining expected outcomes
5. Determining content and availability
6. Matching teaching methods to the audience
7. Evaluating and monitoring the learning and change process.

Unfortunately, because of contingencies and administrative difficulties with the University of Valparaiso, the NICK Chile Project did not complete the training and scheduled activities, causing great discomfort among participants. This contingency undoubtedly damaged the trust and the results achieved through the finely woven and articulated participatory process.

7.4. Developing sustainable interventions

Developing "sustainable" pathways, actions and mechanisms to reduce child obesity implies a long term paradigm shift from a model of development based on inequity and exploitation of resources to one that requires *new forms of responsibility*, solidarity and accountability not only at the national but also at the regional and local level.

Sustainable results demand longer-term perspectives that require commitment of the full spectrum of people involved in the outcome, that the underlying problems be tackled, and that this be done in a way that gives people the motivation and skills to continue working on the deeper issues.

Without doubt the need for effective governance to develop sustainable approaches to societal challenges demand processes that engage and empower people to tackle their own problems. At the same time, the need to build the culture of democratic governance requires strengthening the very capacities that such processes demand.

This requires long-term, constant, persistent and rigorous action and <u>continuous learning programmes</u> that ensure the application of new skills and a high level of systems thinking and approaches which consider the system as a whole, interactions between different elements and possibilities for intervention and regular platforms for discussion, dialogue and problem-solving with other sectors so as to engage and become acquainted with a wide variety of viewpoints in multistakeholder deliberations.

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