



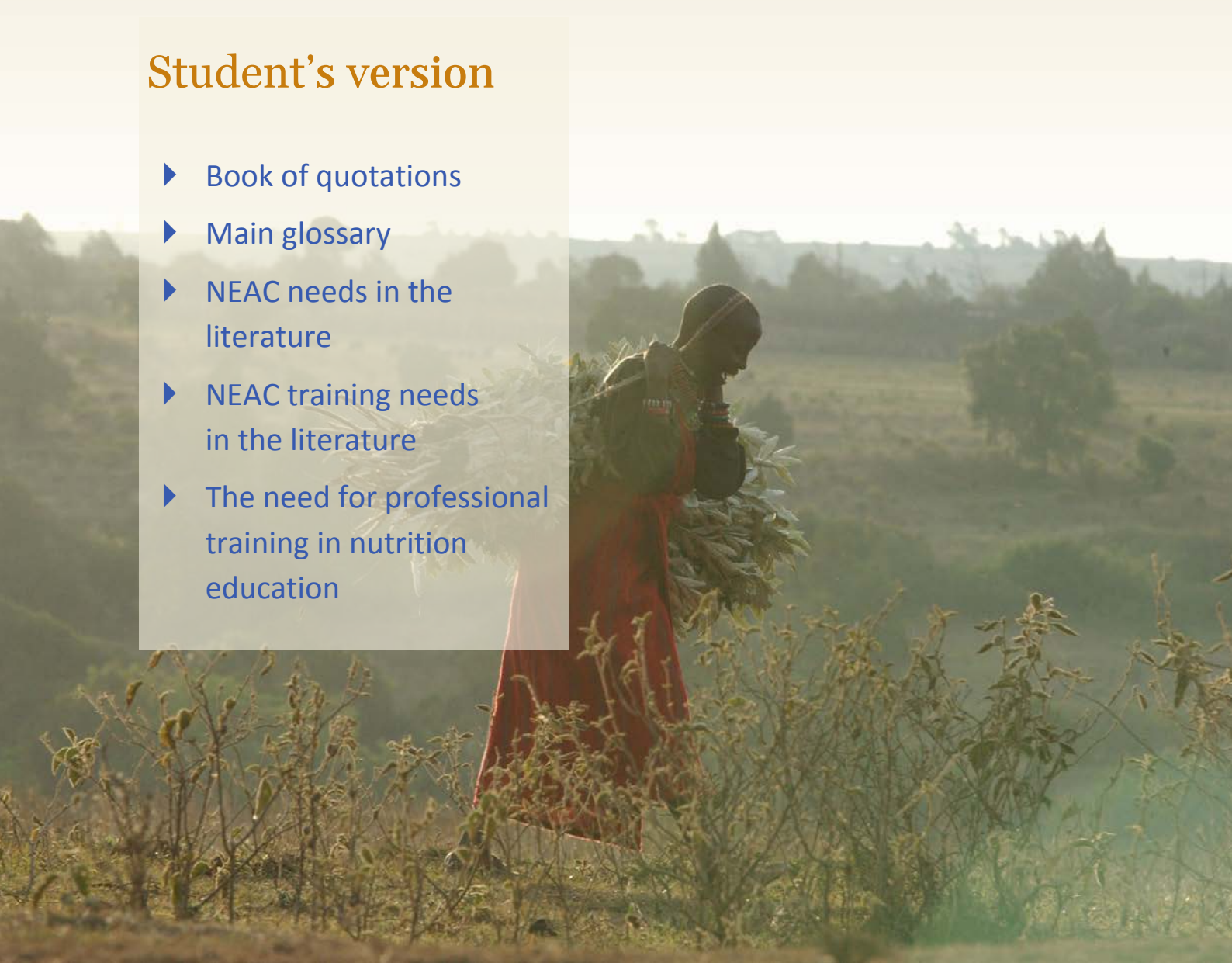
Food and Agriculture
Organization of the
United Nations

ENACT course in nutrition education

Course resources

Student's version

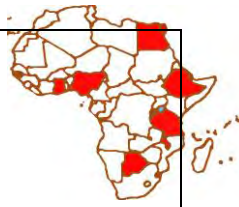
- ▶ Book of quotations
- ▶ Main glossary
- ▶ NEAC needs in the literature
- ▶ NEAC training needs in the literature
- ▶ The need for professional training in nutrition education



2012

Nutrition Education Book of
Quotations from a Case Study
Survey in Africa





Overview

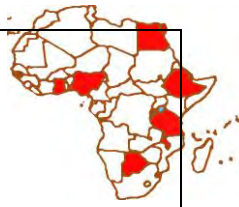
This short booklet presents quotations from the Food and Agricultural Organization of the United Nations (FAO) needs assessment in nutrition education and communication. Over 100 interviews took place in 7 African countries; Botswana, Egypt, Ethiopia, Ghana, Malawi, Nigeria, Tanzania in March 2011. Further information on the project is available at <http://www.fao.org/ag/humannutrition/nutritioneducation/69725/en/>

Through the words of the interviewees, we hope to give a snapshot of the need for nutrition education.



***"TELL ME AND I'LL FORGET, SHOW ME AND I MAY REMEMBER, INVOLVE ME
AND I'LL UNDERSTAND"***

CHINESE PROVERB



Nutrition is neglected.....

In general nutrition has been a neglected issue (corner) in the country (Abuye, Ethiopia Health and Nutrition Research Institute, Ethiopia)

§

I still feel like nutrition issues are not taken seriously and in fact there seem to be trends towards strengthening the curative instead of preventive wing of health. Preventive nutrition issues ... seem to take the backburner hence there is need for advocacy to consider nutrition as an important contribution to health (Maruapula, University of Botswana)

§

Nutrition is one of the skills considered to be scarce in the country (Nnyepi, Senior Lecturer and Surveyor, University of Botswana)

...Why and How

... limited funds allocated to nutrition education programs ... poor supervision ...poor intersectoral collaboration ... lack of commitment to nutrition leads to under-investment in nutrition, which reinforces lack of commitment since government believes nutrition programs don't work ... families and government don't recognize the human and economic cost of malnutrition ... poor community based nutrition programs ... (Khallaf, Community Medicine & Public Health Consultant, NNI, Egypt)

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....some institutions didn't separate food and nutrition as well as food security and nutrition security. It is dawning on them now (Lwanda, Ministry of Agriculture and Food Security, Malawi)

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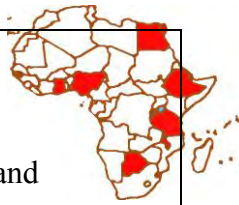
Having the (National Nutrition Strategy) program alone is not sufficient. We need professionals at different capacity to implement the program (Abebe, Alive and Thrive, Ethiopia)

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.....the gap is still that? we don't have a separate nutrition institution in Ethiopia. There should be one to co-ordinate all other sectors (Abuye, Ethiopia Health and Nutrition Research Institute, Ethiopia)

§

..... inadequate support from leaders and planners in an effective nutrition education programme. Ineffective nutrition education programmes are more likely to be a result of ineffective implementation processes, rather than a lack of technical knowledge about what



works in nutrition education to bring about behaviour change (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

... but some progress has been made and there is hope for the future.

We have identified areas where it's lacking and areas where it can be included and scaled up in the NNP. We have brought nutrition high up on the agenda and it's our time to put our words into action (Lemma, Federal Ministry of Health, Ethiopia)

§

..... The existing pro-nutrition and pro-NEAC environment at the national level and the presence of an army of Health & Agricultural Extension Workers ...can enable the country to advance in the area of nutrition and NEAC (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

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Progress has been made, though not enough (Onimawo, Senior Lecturer and Surveyor, National Nutrition Institute, Nigeria)

§

There is a need to situate nutrition higher up in national administration as a cross-cutting issue' (Colecraft, Senior Lecturer and Surveyor, University of Ghana, reporting a key informant)

§

Speaking about leaders and planners: Their decisions and commitment to provide appropriate support for the work are fundamental (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

Nutrition requires inter-sectoral collaboration.....

There is a lack of appropriate guidelines for coordination and integration, which has led to inadequate cooperation among various sectors and lack of harmonization (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

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Currently, the ministry of health is the only implementer of nutrition activities and less priority is accorded to nutrition issues (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

§

The challenges have been as to who is responsible for nutrition; is it MoH or Agriculture? (Orion, Senior Nutrition Expert, Disaster, Prevention & Preparedness (DPPC) under MOA, Ethiopia)



Collaboration among organisations and sectors, such as local government, social organisations, worksites, educational organisations, health centres, and cultural groups, can facilitate nutritional improvements. Nutritionists alone or communicators alone are not able to deliver nutrition information to all sections of the population: they need to collaborate with other stakeholders in providing information on nutrition and other development issues.
(Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

§

There weren't good communications between different sectors dealing with nutritional issues.
(Aisha Mahboub Gamal Eldin, Ministry of Health, Egypt)

§

Nutrition should be the business of every sector/organisation (Education, Health, Water, Agriculture.....) I think building partnerships across these sectors is essential. Which will lead to the need for high level management (beyond the FMOH), maybe under the co-ordination of the PM office (Abebe, Alive and Thrive, Ethiopia)

... and especially more presence in agriculture and food security

We really lack nutrition education in our food security intervention programs.....and I suggest we should improve on that (Orion, Senior Nutrition Expert, Disaster, Prevention & Preparedness (DPPC) under MOA, Ethiopia)

§

Take for instance our farmers, we just concentrate on food production without giving much consideration to the nutritional value of the crops. It appears we are for quantity as opposed to nutrient-rich crops. We do not engage experts to teach us nutrition and crop diversification
(Sebi, Agriculturalist (Food Security), Ministry of Agriculture, Botswana)

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This department concentrates on making people become food secure by way of food production – ploughing and planting their own food. The food items that we concentrate on mostly are cereals because cereals are our staples in the country ... (Sebi, Agriculturalist (Food Security), Ministry of Agriculture, Botswana)

§

..... there is a need for integration, especially integration between the agricultural sector, the health sector (Ntshebe, Co-ordinator Nutrition Rehabilitation Programme (OVC centre), Botswana)

§

With the Ministry of Food and Agriculture, NEAC is not a priority (Colecraft, Lecturer and Surveyor, University of Ghana, reporting a key informant)

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Least effective - agricultural extension advice, because of inadequate capacity to deliver the services due to inadequate knowledge on nutrition by staff and low numbers of extension workers (Geresomo, Human Nutrition Lecturer, Bunda College of Agriculture Malawi)

There is a general lack of knowledge and awareness of nutrition ...

We produce good food from our fields and if we ate our foods, we would be well. But we are not aware or do not appreciate the value of our wholesome foods and the nutrition they provide (Chakalisa, Education Officer, Curriculum Development and Evaluation, Botswana)

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One of the main causes of malnutrition is inadequate or lack of knowledge of food and health. (Mtimuni, Senior Lecturer and Surveyor, Bunda College, Malawi)

§

Poor nutrition and nutritional status in this country has not always been because of lack of food but more so due to a lack of awareness which should come from behaviour change communications and nutrition education (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

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Most people don't know about the scope and depth of nutrition issues (Abebe, Lecturer, Ethiopia)

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You can go to any mother in rural area and ask what she should feed her child; she wouldn't know anything unless she is exposed to health facilities (Gobezie, retired nutritionist, former FAO staff, Ethiopia)

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Even some physicians have poor and wrong knowledge about nutrition (Sultan, Clinical nutrition consultant and lecturer, NNI, Egypt)

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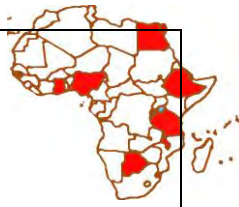
Awareness on nutrition is not high compared to other issues such as HIV and contraception. (Aryeetey, Lecturer and Head of Department, University of Ghana)

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Consumer education needs to be supported, it has been weak. People do not know much about food labels and how they can use them (Gobotswang, Senior Lecturer, University of Botswana)

§

People don't see nutrition as a development issue; hence they don't pay much attention to it (Alatiah, Tutor, Kimtampo Rural Health Training School, Ghana).



and many misperceptions and poor practices.....

Among the general population (and also among health practitioners) there are also a lot of misperceptions about nutrition (Aryeetey, Lecturer and Head of Department, University of Ghana)

§

.....of course awareness is different from practice. The awareness could be therebut practice is not satisfactory. Mind you, when you go to the rural places compared to cities, I'd say the nutrition information and information in general is still very limited (Tiroeng, Program Officer (Food, Nutrition and Livelihoods Security), Project Concern International Botswana)

§

The elderly especially ... resist dietary advice to an extent that they would tell you things like 'I grew up eating this way. Why do you expect me to change now?' (Semele, Nutrition Lecturer, Institute of Health Sciences, Gaborone, Botswana)

§

Most people think nutrition is only about eating food or being full - which leads to overconsumption of the same food over and over (Abebe, Lecturer, Ethiopia)

§

Only men get priority during meal times. Women and children are usually ignored or they have to manage on 'left-over' foods (Gudisa, Medical Director, Adare Hospital, Ethiopia)

§

Other than the food taboo, there is some perception as to what children should eat or not eat. Good nutrition is thought to be eating raw meat, fatty meatbeing fat/overweight is taken as a sign of good nutrition (Abebe, Alive and Thrive, Ethiopia)

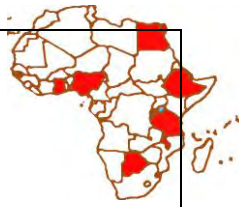
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Children are neglected. They are fed on 'leftovers' from parents. The other perception is considering 'shortness' (stunting) as something passed on from parents (genetic) rather than the consequence of malnutrition so people are not alert to seek treatment (Tadele, Pediatric Resident, Medical Faculty, Addis Abeba University, Ethiopia)

§

Most of the wrong perceptions centred on the feeding of infants and young children including the (perception that) giving of colostrum (first milk) is not good for infants and also meat and eggs are not good for young children (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

§



Issues like ‘children shouldn’t eat eggs or meat’, the giving of other drinks (water, tea) than breast milk.....(the idea that) pregnant mothers should not eat vegetables or should not drink milk because there will be some white covering on the child’s head (Lemma, Federal Ministry of Health, Ethiopia)

§

Mothers give butter to a newborn child thinking it will soften the intestine of the baby. They also give water with sugar and other things ... In urban areas people are getting fat indicating poor diet especially copying western diet. We are heading to chronic diseases more than our hospitals can support (Gobezie, retired nutritionist, former FAO staff, Ethiopia)

§

People associate being fat with ‘eating well’ and a sign of wealth, which has led to obesity especially in towns and cities (Guta, PATH, previous MOH, Malawi)

§

Food in Malawi means maize meal (Swira, Principal Nutrition & HIV/AIDS officer, Ministry of Gender, Children & Community, Malawi)

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Agricultural practices- most farmers (are) still growing only staple foods with little or no production of legumes and rearing of small ruminants so that they can have balanced diet (Chilabade, Ministry of Health, Malawi)

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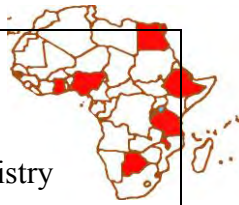
(There is) excessive intake of alcohol and pork meat in pubs and general intake/preference for high energy foods with minimal level of exercise especially in towns; low recognition of the nutritive value/importance of fruits and vegetables in diets partly because of high cost but mainly due to ignorance as there is tendency to go for soft drinks and beers (Mugyabuso, Save the Children in Tanzania)

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Local/indigenous foods (are) perceived as low class and (there is) much dependence on exotic quick fixes in addressing local problems versus local solution for local problems (Benjamin, Helen Keller International, Tanzania)

§

Vegetables are perceived as food for poor people (Shirima, Counseling Nutrition & Health, COUNSENUTH, Tanzania)



The importance of the amount rather than the quality (Aisha Mahboub Gamal Eldin, Ministry of Health, Egypt)

§

Urbanization and globalization (are) leading to a sedentary lifestyle and increasing consumption of junk food and sugar among all age groups (is) contributing to increasing prevalence of obesity and non communicable diseases among Egyptians (Genena, Medical Research Institute, Egypt)

§

The perception (is) that highly refined foods are high class and good (Heri, Muttimbili University of Health and Allied Sciences, Tanzania).

§

Most people in rural areas believe that imported food items are more nutritious than our indigenous food (Obiakor, Lecturer, Enan Newerem University, Nigeria)

§

... Poor diet may be due to modernization, for example young women feeding children using formula instead of breastfeeding because it is the modern thing to do ... people abandon traditional foods and instead eat refined foods as this is a sign of being modern (Maruapula, Lecturer, Botswana).

§

Banana is thought to promote weight loss.....banku (staple food) is considered a promoter of overweight.....plantain is considered a good source of iron (Aryeetey, Lecturer and Head of Department, University of Ghana)

§

There is a perception that alcohol promotes appetite hence a lot of people drink before eating and this would inhibit the absorption of certain nutrients.

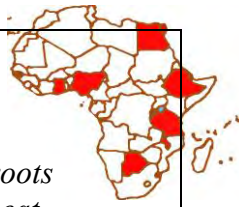
There is the notion that the bigger or fatter you look the wealthier you are

(Alatiah, Tutor, Kimtampo Rural Health Training School, Ghana).

§

Some people believe that vitamins and mineral supplementation will lead to obesity.....some believe that vegetables and fruits have no role in nutrition and that the only nutritious food is meat (Sultan, Clinical nutrition consultant, National Nutrition Institute, Egypt).

§



.... Someone who has anaemia – people here think that this person has to eat beetroots ... in our society there are some food items that people say a pregnant woman should not eat. For example, eggs – it is said that the baby will be bald. (Moruisi, Principal Dietician, Ministry of Health, Botswana)

§

Children would not be allowed to eat a full meal with meat if the breadwinner is not home. They would just be given the gravy. When the breadwinner gets home, that is when the meat will be dished out and the bulk of the meat still would be given to the breadwinner.

We give our children breadcrumbs..

(Sebi, Agriculturalist, Ministry of Agriculture, Botswana)

§

It is very common to be told by caregivers that kids do not eat green vegetables because they have not developed a liking to them. Vegetables are regarded as an elective kind of food. You'd hear caregivers telling you that 'vegetables are very expensive, hard to get and labour intensive to prepare!' and because of that, they just don't eat them.....The other attitude I usually note, is that people prefer to eat and feel full. There is therefore a tendency to eat a large meal consisting largely of carbohydrate and meat. Someone would say 'if I have phaleche (stiff maize meal porridge) and seswaa (pounded meat), I'll have energy to go on for the whole day.' (Makhanda, Clinical Nutritionist, Botswana-Baylor Children's Clinic)

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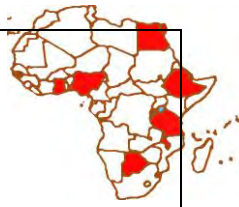
There is a perceived Setswana way of how an infant or child has to be fed. Caregivers feed children soft porridge, since it is soft. If a single child in a household is malnourished amongst several other children in the family, it is almost like it is the child's fault....how come she is malnourished and all the other ones are okay? (Ntshebe, Co-ordinator- Nutrition Rehabilitation Programme (OVC centre), Botswana)

§

Sometimes I'd ask them 'what did you eat today?' The response will be something like 'We did not eat today because we were late for the clinic.' OR I'd ask 'did you carry any food with you to eat in the clinic?' 'No we didn't. We just got up too early and we couldn't cook anything.'

That got me thinking that maybe we ought to talk about feeding and meal preparations where I can encourage them to prepare something quick or suggest to them to cook the night before they come to the clinic and carry the food with them and eat while they are waiting their turn to be attended to in the clinic.

Even food choices – we asked them 'What did you eat today?' 'Oh, we ate motogo (sorghum soft porridge) with sugar.' Or 'We ate motogo.' 'With what?' 'No, we didn't have anything so we diluted it with water.' 'And then what else did you eat?' 'Nothing other than mabele (sorghum porridge), or paleche.' –Notice, these are all choices from the carbohydrates group. From this I could tell it appears they don't seem to know that different food groups exist. (Makhanda, Clinical Nutritionist, Botswana-Baylor Children's Clinic)



§

People do not want to look thin.....but I suspect that because of the stigma around HIV/AIDS, some people might be over-eating to appear 'normal' (Gobotswang, Senior Lecturer, University of Botswana)

... and, not surprisingly, a lack of nutrition education and of good nutrition education.....

there is a lack of what could be called NEAC in the country. Respondents (to the case study) had to ponder a lot before they could conclude if something is or isn't nutrition education. (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

§

There are no specific strategies on nutrition education (Kalimbira, Senior lecturer in Human Nutrition, University of Malawi).

§

It appears that NEAC has until recently not been fully recognized as an important activity in its own right. This may be related to the general perception of NEAC as mainly giving nutrition information or at best promoting a message (Mtimuni, Senior Lecturer and Surveyor, Bunda College, Malawi)

§

Information transfer is the most common method.....It doesn't mean BCC and participatory approaches are not in place, but they aren't emphasised (Abebe, Lecturer, Ethiopia).

§

Information transfer (is the most common method) We simply tell our patients general things and answer their questions (Gudisa, Medical Director, Adare Hospital, Ethiopia)

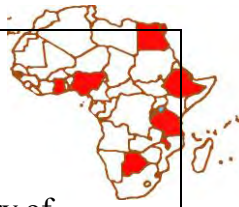
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IEC materials on their own are least effective. Materials rarely reach the community (Mwale, Ntheu District Agriculture Office, Malawi)

§

What I have seen in Tanzania is IEC- though proving ineffective (Benjamin, Helen Keller International, Tanzania)

§



IEC and information transfer are most frequently used especially with patients in the hospitals and the maternal health children centres (Aisha Mahboub Gamal Eldin, Ministry of Health, Egypt)

§

Individual counselling (home visit) had been effective since it helps the mother to reach and agree upon actions by clearing her fears and questions (Abebe, Lecturer, Ethiopia)

§

Speaking about Nutrition Education: If any, there is very little (Matsapa Phegelo, Ministry of Health, Botswana)

§

I would not say the activities are ineffective, but rather that they could be improved. For example the school feeding program is done on a stand-alone (basis) and is not linked to any education efforts for the students. School gardens are done from an agricultural point of view and not linking them to nutrition education (Maruapula, Lecturer, Botswana)

§

Hospital counselling is the least effective because the professionals only talk and whether the individuals understand and can do what they are being told is not known (Alatiah, Kintampo Rural Health Training School, University of Ghana)

§

I cannot say this one is more or less effective than another type of program. We know that one drop cannot make an ocean. They are probably each addressing a section which together moves us somewhere (Moruisi, Principal Dietician, Ministry of Health, Botswana)

... some reasons why

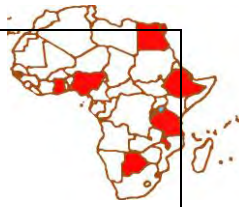
Many interventions have been piecemeal and remained in the domain of the nutrition discipline without adequate integration of related disciplines/sectors ... frontline staff lack technical knowledge, and skills to adequately implement interventions, especially to carry out effective nutrition education (Colecraft, Senior Lecturer and Surveyor, University of Ghana)

§

NEAC is not well addressed in most of Tanzania policy and if it is there, (there are) no good strategies for implementation (Maseta, Teaching and Research Activities, Open University, Tanzania)

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Activities that focus on general nutrition education for all population groups are limited due to limited funding and low recognition of the importance of nutrition. (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)



§

There is lack of clear coordination and integration of nutrition activities as it should be. This is due to failure to fully integrate food and nutrition considerations into development plans at all levels from household, village, and district, regional and national level. This poses a great challenge to nutrition education and training in the country (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

§

Evaluations of NEAC are not done in many interventions (Tawfik, Surveyor, National Nutrition Institute, Egypt)

§

NEAC is poorly tackled in the Medical & Nursing undergraduate curriculum ... limited number of trained personnel in the NEAC ... poor communication and co-ordination between related ministries and authorities on the national and local levels (Khallaf, Community Medicine & Public Health Consultant, NNI, Egypt)

§

I think the whole issue of education (health & nutrition) and communication in general is lacking from the MOH side (Lemma, Federal Ministry of Health, Ethiopia)

§

There have been a lot of NEAC initiatives by many stakeholders. However, these efforts have largely been uncoordinated (Kalimbira, Senior lecturer in Human Nutrition, University of Malawi)

§

It has to be participatory

For example community conversation in community based nutrition programthe ability of health extension worker to facilitate participation and reach or agree on actions is not sufficient. So there is a need to build their capacity to lead on dialogues (Abebe, Lecturer, Ethiopia).

§

I still go back to the issue of capacity building. We need more professionals (Abebe, Alive and Thrive, Ethiopia)

§

NE is done by untrained personnel who may have nutrition knowledge but lack communication skills (Tawfik, Surveyor, National Nutrition Institute, Egypt)

§

We do lack knowledge of nutrition and NEAC at the national level. It takes political commitment to change this. We also need sectoral collaboration (Tadele, Pediatric Resident, Medical Faculty, Addis Abeba University, Ethiopia)



§

NE shouldn't be a matter of occasion but needs to be done continuously
(Lemma, Federal Ministry of Health, Ethiopia)

§

(We need to redesign) the communication package for trainers and educators (to make it) more practical to the Ghanaian context (for instance can mothers really do exclusive breastfeeding for 6 months in this country given the women's work outside the home etc?)
Need specific information on the nutritive value of local foods so that more specific messages on food choices can be developed (Adokiya, Lecturer, University of Development Studies, Temale, Ghana)

§

Involve participants more in practice and feedback
(Odenybo, Lecturer, Michael Okpara University of Agriculture, Nigeria)

§

There is need for a proper assessment of the community's understanding of the nutrition issues. People are not sure of what to do with the information ... (Galeemelwe, Ministry of Health, Botswana)

§

There has to be deliberate funding by government and other partners of nutrition activities. Currently, information transfer is the only approach that is mostly funded. (Tiroeng, Program Officer (Food, Nutrition and Livelihoods Security), Project Concern International Botswana)

§

Undertake research to know what people know and need to know, focus on behavior change instead of just the knowledge domain

EVALUATE; EVALUATE the effectiveness/impact of the programs

(Maruapula, Lecturer, University of Botswana)

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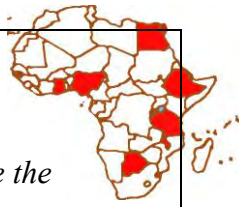
There is need to also develop a coherent communication strategy for nutrition education. (Ntshebe, Co-ordinator Nutrition Rehabilitation Programme (OVC centre), Botswana)

§

Counselling may not help a lot, there should be some way to economically empower them (food security) so that they can make good use of the counselling at health facilities (Tadele, Pediatric Resident, Medical Faculty, Addis Abeba University, Ethiopia)

§

Challenges are there ... Most of our clients are poor. You may be talking about food and nutrition but then they don't have money to buy good quality food ... some caregivers are



grandmothers, are old and do not have the energySometimes, a grandmother will be the one attending the workshops but somebody else is the one preparing meals at home.
(Makhanda, Clinical Nutritionist, Botswana-Baylor Children's Clinic)

§

The other lesson is that these programs require a lot of monitoring, coaching and motivation.
Tiroeng, Program Officer (Food, Nutrition and Livelihoods Security), Project Concern
International Botswana)

§

.....personal communication and demonstration was the most effective tool with children
(Sultan, Clinical nutrition consultant, lecturer and trainer, National Nutrition Institute, Egypt).

Do the media play a role?

I think the national radio station (Radio Botswana 1) is probably the only one broadcasting to remote areas of the country, but how often does it broadcast issues on nutrition? (Makhanda, Clinical Nutritionist, Botswana-Baylor Children's Clinic)

§

(There is a) virtual absence of nutrition items in the national daily news paper (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

§

Programs in the Department of Public Health often use the national television station and radio stationsSince such coverage is sporadic, useful programs ... do not have as much impact on social awareness about NEAC issues (Nnyepi, Senior Lecturer and Surveyor, University of Botswana)

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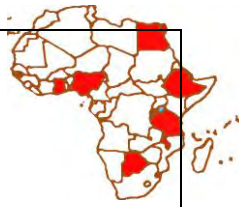
The nutrition programmes are not routinely aired. They are only aired when there is a free slot and the producer is interested in the subject (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

Nutrition Education is needed in the family.....

I know the mothers are the ones caring for children but I believe the education should be given to both parents (Lemma, Federal Ministry of Health, Ethiopia)

§

We may target the mothers, but mothers have no control over resources. So both the mother and the husband should be educated
(Gobezie, retired nutritionist, former FAO staff, Ethiopia)



§

Men/Husbands - women usually confer with the men about what to cook. Men are also given a greater proportion of the food hence if they understood nutrition issues they would help their wives to make better food decisions and also there would be more equitable distribution of food in the home (Alatiah, Kintampo Rural Health Training School, University of Ghana)

§

Youth – school-going children up to form five. We should not assume that they are going to eat whatever the society feeds them..... Young children do not understand the value of good nutritional foods (Chakalisa, Education Officer, Curriculum Development and Evaluation, Botswana)

§

The elderly – they have been neglected (Moruisi, Principal Dietician, Ministry of Health, Botswana)

in the community.....

If you look at people around, everybody needs help (Matsapa Phegelo, Ministry of Health, Botswana)

§

NEAC should be in the community. We produce good food from our fields and if we ate our foods, we would be well. But we are not aware or do not appreciate the value of our wholesome foods and the nutrition they provide (Chakalisa, Education Officer, Curriculum Development and Evaluation, Botswana)

.....and among professionals..

Important groups are the HEW (Health Extension Workers) because they have got a direct link with the community (Abuye, Ethiopia Health and Nutrition Research Institute, Ethiopia)

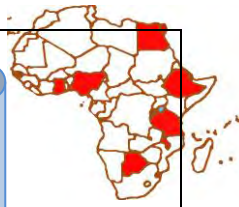
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Health personnel are most influential. We are supposed to guide the community in right eating but we ourselves do not have training and we don't know how to do it effectively (Sintayehu, Health Officer, Ethiopia)

§

People tend to accept advice and education better from health professionals. Usually women (pregnant mothers) and children come to health facilities either for antenatal care or for immunizations. So we have the opportunity to provide NE as part of counselling (Gudisa, Medical Director, Adare Hospital, Ethiopia)

§



Community level health, agriculture and community development extension workers serve as educators - nutrition could benefit from such persons (Mugyabuso, Save the Children in Tanzania)

§

Policymakers need (education) the most. Because policy makers do not understand nutrition and so if they understand they will make adequate budgetary allocation for nutrition (Eluaka, Federal Ministry of Health, Nigeria)

§

Doctors (need to know about nutrition) – largely, what the doctor says goes and it is followed religiously (Chakalisa, Education Officer, Curriculum Development and Evaluation, Botswana)

§

For the benefit of patients, I think doctors need nutrition information. Most doctors truly speaking are really ignorant in so far as nutrition is concerned (Makhanda, Clinical Nutritionist, Botswana-Baylor Children’s Clinic)

§

Agricultural extension workers (need to know about nutrition) – they need to consider nutrition as they advise people on what to plant to improve food security and ultimately improve nutrition. Policy makers – there is need for them to advocate for funding of nutrition and to prioritize nutrition programs. (Ntshebe, Co-ordinator- Nutrition Rehabilitation Programme (OVC centre), Botswana)

This makes for a strong case for nutrition educators

One of the main solutions to solve or combat nutritional problems, must be “educational” and if this is to be successful it must result in appropriate behavior change (Mtimuni, Senior Lecturer and Surveyor, Bunda College, Malawi)

§

My opinion is that NE at all levels is important and essential. There should be a strong department in the Ministries of Agriculture, Education and Health ... NE should start at an early age (from grade one). I have even written 4 books for the first 4 grades of the elementary schools though I couldn’t convince the MOE to include this in the curriculum (Gobezie, nutritionist, former FAO staff, Ethiopia)

§

We need people with a nutritional background to advise our farmers on what other crops should be grown - for example, ground nuts, bambara beans and the like, i.e. foods that are nutrient-rich, to help diversify the crop. (Sebi, Agriculturalist (Food Security), Ministry of Agriculture, Botswana)



§

We need more nutrition educators in all settings especially in health facilities because we are having more diet related chronic disease. (Abuye, Ethiopia Health and Nutrition Research Institute, Ethiopia)

§

The country needs nutrition educators at schools, at all levels of health facilities, in agriculture, even in the central and local government (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

§

No question that we need more nutrition educators. I suggest (that) using nutrition educators in the community (community leaders, religious leaders....) especially in the rural setting, will have more positive effect in reaching the community (Gobezie, retired nutritionist, former FAO staff, Ethiopia)

§

Nigeria needs a lot of nutrition educators ... in schools, hospitals and clinics, agriculture, communities, state and federal officers. (Eluaka, Federal Ministry of Health, Nigeria)

§

*Definitely we need more people passionate about nutrition and not just people in health or nutrition professionals ... people in education, and agriculture also
(Aryeetey, Lecturer and Head of Department, University of Ghana School of Public Health)*

§

We especially need those with a strength in communication and advocacy; they need to be placed in health facilities, community, schools (by district) and at the ministry of agriculture to guide integration of nutrition into food production (Ntshebe, Co-ordinator Nutrition Rehabilitation Programme (OVC centre), Botswana)

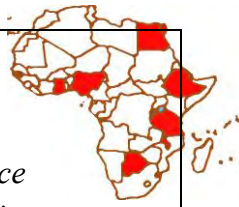
§

Yes we do need more nutrition educators to monitor, educate and continue to raise awareness on nutrition and nutrition related issues and to provide the technical expertise that is needed for different programs. We need them in the communities. (Tiroeng, Program Officer (Food, Nutrition and Livelihoods Security), Project Concern International Botswana)

§

*I don't think we have enough of nutrition educators, because I think by now, as a person, I could have interacted with one so far, but I haven't.
(Batlhophi, Senior Consultant, Institute of Development Management, Botswana)*

§



(There is a) need for more nutrition educators in all sectors in order to drastically reduce malnutrition in Nigeria even the current educators need to be re-trained for quality delivery of services (Onimawo, Senior Lecturer and Surveyor, National Nutrition Institute, Nigeria)

.....and for nutrition education training and trainers

For a long time nutrition training has been conducted in a rather traditional fashion; face to face with limited scope for acquiring skills for critical thinking and practical or action orientation ... training is based on description of nutrition problems rather than on action or interventions for solving nutrition problems ... there is need to shift emphasis in training from assessment or description of problems to action/practically oriented training to solve nutrition problems in the country (Kinabo, Senior Lecturer and Surveyor, Sokoine University, Tanzania)

§

A careful consideration has to be made as to whom to train as a nutrition educator (Makhanda, Clinical Nutritionist, Botswana-Baylor Children's Clinic)

§

NEAC training should be a strong component of training programs for all level of staff involved in delivering nutrition education to mothers..... (Aryeetey, Lecturer and Head of Department, University of Ghana)

§

A little of NEAC only happens in home economics classes.

(Chakalisa, Education Officer, Curriculum Development and Evaluation, Botswana)

§

There is not only need for more but also better NEAC training ... current nutrition training programs with some NEAC content predominantly emphasize non-participatory and top-down learning activities which are not preferred by students ... (there is a) need to improve course content to have a more practical orientation (Colecraft, Senior Lecturer and Surveyor, University of Ghana)

§

We need NEAC in the curriculum so that we would get more professionals ... This is what we need in our long term development plan (Orion, Senior Nutrition Expert, Disaster, Prevention & Preparedness (DPPC) under MOA, Ethiopia)

§

There should be a practical activity with each subject that connects the students with real community setting. Only then can we talk of effectiveness (Gobezie, retired nutritionist, former FAO staff)



§

There is also a need to build capacity, to train NEAC trainers (Matsapa Phegelo, Ministry of Health, Botswana)

§

NEAC trainers have adequate knowledge of theories though I can't say that have enough field experience (Abebe, Lecturer, Ethiopia).

§

Nigeria is having a problem of students knowing all the theories but with little or no practical experience (Nkwdala Chaka, Assistant Lecturer, Nigeria)

§

They may have knowledge of NEAC theory but since the program itself is new, they may lack field experience and professional training (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

§

Nutrition education and communication should be encouraged in schools and universities (Eluaka, Federal Ministry of Health, Nigeria)

§

Most respondents did not distinguish between NEAC training and the study of nutrition science (Mtimuni, Senior Lecturer and Surveyor, Bunda College, Malawi)

§

Current NEAC can be improved by including an extension program which would include work placement and field work to make students understand the local setting (Alatiah, Kintampo Rural Health Training School, University of Ghana)

§

I believe we benefit more if we get some refresher training on basic knowledge nutrition and also methods of communication ... knowhow on technical skills of communication is important (Tadele, Pediatric Resident, Medical Faculty, Addis Abeba University, Ethiopia)

§

Constant training of educators who are the change agents (is needed) (Obiakor, Lecturer, Enan Newerem University, Nigeria)

§

Selection of people who are interested ... more practice in the field (Sultan, Clinical nutrition consultant, lecturer and trainer, National Nutrition Institute, Egypt)



§

Finding nutrition education material, text books and guidelines specifically tailored for (our) context was a big challenge (Ersino, Lecturer and Surveyor, Hawassa University, Ethiopia)

§

NEAC training packages are just what we need in Ghana at this moment to be able to position nutrition as a development issue
(Alatiah, Kintampo Rural Health Training School, University of Ghana)

§

It's very important to integrate NEAC in the educational curriculum starting from elementary level (Sintayehu, Health Officer, Ethiopia)

§

From curriculum level, a multipronged approach would be great at schools; we would need advocacy targeting subjects. NEAC would need to be infused and integrated into career subjects (Chakalisa, Education Officer, Curriculum Development and Evaluation, Botswana)

§

Before we start to educate the community we have to educate and get training for ourselves
(Gudisa, Medical Director, Adare Hospital, Ethiopia)



Food and Agriculture
Organization of the
United Nations

ENACT course in nutrition education

Course glossary

Glossary

Adult learning

Some studies suggest that adult learners may need a different approach to learning from schoolchildren. Malcolm Knowles (1973) suggested the following principles:

1. Need to know: Adults need to know the reason for learning.
2. Experience: Adults draw upon their experiences to aid their learning.
3. Self-concept: Adult needs to be responsible for their decisions on education, involvement in planning and evaluation of their instruction.
4. Readiness: The learning readiness of adults is closely related to the assumption of new social roles.
5. Orientation: As adults learn new knowledge, they want to apply it immediately in problem solving.
6. Motivation (added later): As people mature, they receive their motivation to learn from internal factors.

These principles are often mentioned as a justification for participatory approaches. They are particularly important in nutrition education, where some degree of ownership is seen as essential to maintaining and spreading good dietary practices.

African Health Open Educational Resources (OER) Network

A platform to share educational materials and debate key issues around health education in Africa. The OER Network aims to share and circulate health-related educational materials by building links to existing organisational materials and individual lectures which authors agree to make available under one of the various Creative Commons licenses. The material is mostly medical, but there are some courses in nutrition, and also the SAIDE course in household food security.

<http://www.oerafrica.org/healthoer>

African Medical and Research Foundation (AMREF)

A large international NGO based in Kenya. AMREF carries out a wide variety of activities in the health sector in various African countries, with an emphasis on Ethiopia, Kenya, South Africa, Uganda, southern Sudan and Tanzania. It specialises in education and training, and has extensive experience of distance learning and e-learning. It places considerable emphasis on community action and community learning, but also on developing advocacy skills and persuading governments to scale up successful projects and incorporate them into national policy.

Amref offers courses, diplomas and degrees in nutrition and community health and health education and promotion.

<http://www.amref.org/>

Africa Nutritional Epidemiology Conference (ANEC)

A conference hosted jointly by the African Nutrition Society (ANS), the Nutrition Society of South Africa (NSSA) and the Association for Dietetics in South Africa (ADSA). It is generally held every two years at different locations in Africa.

<http://www.nutritionociety.org/events/5th-african-nutrition-epidemiology-conference-anec-2012-transforming-nutrition-landscape>

Alignment

In educational objectives, alignment is the match between objectives, activities and assessment - i.e. you aim to do something (objective), you practise doing it (activities) and you evaluate to see if you can do it or have done it (assessment). Lack of alignment reveals that one of the essential elements does not fit.

Alive and Thrive (A&T)

A 6-year initiative (2009-2014) to improve infant and young child nutrition by increasing rates of exclusive breastfeeding and improving complementary feeding practices. A&T aimed to reach more than 16 million children under 2 years old in Bangladesh, Ethiopia, and Viet Nam. The program was implemented by a consortium of organizations with broad experience and expertise in supporting health and nutrition. Popular NE resources included TV spots for each of the three countries and a music video for Ethiopia.

<http://www.aliveandthrive.org/about-us>

Anaemia

See **iron-deficiency anaemia**.

Animal-source foods (ASFs)

Any food item that comes from an animal source such as meat, milk, fish, eggs, cheese and yogurt. ASFs provide a variety of micronutrients that are difficult to obtain from plant foods alone, such as vitamin B12, iron, zinc, vitamin A, riboflavin and calcium: the micronutrient content varies between different ASFs (e.g. milk and meat differ in their content of some important nutrients such as iron, vitamin A and B-12, calcium and zinc). Not getting enough of these micronutrients can lead to anaemia, poor growth, rickets, poor mental abilities, blindness, poor function of motor

nerves and muscles, and eventually, death. Relatively small amounts of ASFs added to a vegetarian diet can be of great benefit. As a nutrition educator, it is important to encourage ASFs in the diets of women and children, as families often keep these foods for the working male family members only. (Adapted from Murphy & Allen 2003)

Antioxidants

Substances that protect and repair cells from damage caused by unstable molecules known as free radicals. Examples of antioxidants are beta-carotene (e.g. in orange-coloured fruits and vegetables), lycopene (e.g. in tomato), vitamins C, E, and A. Antioxidants may prevent chronic diseases like heart disease and some cancers, and fight infections and colds.

Adapted from

<http://www.cancer.gov/cancertopics/factsheet/prevention/antioxidants>

Baby-Friendly Hospitals (BHF) Initiative (BFHI)

A global effort launched by WHO and UNICEF in 1991. Hospitals join the scheme and undertake to implement practices that protect, promote and support breast-feeding. More than 152 countries and thousands of hospitals have joined the initiative, which is backed by in-service training materials for hospital staff and monitoring and evaluation tools. The movement has been successful in increasing the number of babies being exclusively breastfed for the first six months.

<http://www.who.int/nutrition/topics/bfhi/en/>

Barrier analysis

Barrier analysis focuses on the obstacles to changing practices. It is used in community health and development projects to identify behavioral determinants so that more effective messages and support activities can be developed.

Baseline

The baseline is the point you start from. In nutrition education it is established by collecting specific data about people's knowledge, attitudes, practices or perceptions before the intervention, which can be compared with the same kind of data after the intervention or with data from control groups (qv). The comparison will show what has changed, i.e. whether the intervention has worked.

Baseline and endline studies

A baseline study is an analysis of the current situation to identify the starting points for a program or project, i.e. what you hope will change. In

nutrition education the start points are usually seen in terms of knowledge, attitudes, practices and perceptions, together with aspects of the enabling environment and social influences. An endline study looks at the same factors to see what has changed as a result of the intervention. help. In nutrition education a breeder effect can be seen when women start exclusive breastfeeding because their sisters and friends do it.

Behaviour change communication (BCC)

“The strategic use of communication to promote positive health outcomes, based on proven theories and models of behavior change” (AED n.d.). BCC approaches call on behaviour change theory to explain the motivations and pressures that influence people to change their health behaviour.

A systematic behaviour change intervention starts with formative research and behaviour analysis, defines behavioural objectives and “segments” (separates) the target audience into groups. This is followed by “communication planning”, pre-testing messages and materials and choice of communication channels. Implementation consists of disseminating the messages in various ways and monitoring the process, followed by evaluation. (For more see Unit 5A.)

Social behaviour change communication (SBCC)

SBCC aims at advocacy and social mobilization as well as BCC and is more socially oriented: it uses models and demonstrations, group sessions, experimentation, problem-solving and peer support, and pays more attention to two-way communication (AED/LINKAGES 2003). It is described as “an interactive, researched and planned process aimed at changing social conditions and individual behaviours, using advocacy, social mobilization and behaviour change communication”.

Brainstorming

Brainstorming, originally developed to generate original ideas for solving problems, is a way of gathering a group’s ideas as a preliminary to sorting or evaluating them. In brainstorming all ideas are accepted. It is not a test, or a way of finding out what people know.

Breastfeeding

Current WHO breastfeeding advice is as follows (WHO 2002): Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. After 6 months, to meet their evolving nutritional requirements, they should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years or beyond. "Exclusive breastfeeding" is defined as no

other food or drink than breastmilk, not even water, for the first 6 months of life, but allows the infant to receive oral rehydration solution (ORS), drops and syrups (vitamins, minerals and medicines).

"Predominant breastfeeding" means that the infant's main source of nourishment has been breast milk.

http://www.who.int/nutrition/topics/infantfeeding_recommendation/en/

Breeder effect

The result of a practice becoming widespread of its own accord. If a farmer plants a new crop which sells well in the market, other farmers may follow her example, and the practice may spread without any other help. In nutrition education a breeder effect can be seen when women start exclusive breastfeeding because their sisters and friends do it.

Calorie

A unit of measurement of energy, often used to describe the energy content of a food, a dish or a diet. One kilocalorie (kcal) equals 1 000 calories. One teaspoon of sugar provides around 16 kcal of energy. For an average population, men aged 18-30 need around 2 800 kcal a day while women need around 2 400 kcal/day. The energy contribution from nutrient groups according to the General Atwater factors is: fat = 9kcal/100g; protein and carbohydrates = 4kcal/100g; alcohol =7kcal/100g. **n.b.** In the International System of Units (ISU), the universal unit of energy is the joule (J). One kilocalorie = 4.184 kilojoules (kJ).

Care Group

A group of 10-15 voluntary, community-based health educators who regularly meet with NGO project staff for training and supervision. Each of these volunteers goes out at least monthly to do health promotion with a small cohort of parents of young children.

<http://www.caregroupinfo.org/blog/>

Change agent

A change agent is a person who helps organizations or groups to transform themselves.

Child Survival Collaborations and Resources Group (Core Group)

A membership association of more than 35 U.S. Private Voluntary Organizations that work together to promote and improve primary health care programs for women and children and the communities in which they live. The CORE Group's mission is to strengthen local capacity on a

global scale to measurably improve the health and wellbeing of children and women in developing countries through collaborative NGO action and learning. Collectively, its member organizations work in over 140 countries, supporting health and development programs.

<http://www.coregroup.org/>

Child-To-Child Movement/Trust

An international network promoting children’s participation in health and development. It encourages child-centred, active learning approaches that engage children on health and development issues. Children then pass on their learning to other children, their families and wider communities. The Trust was formally established in 1987 and is based at the University of London’s Institute of Education. Over the past 30 years Child-to-Child has spread to over 70 countries worldwide and has impacted over a million children annually.

<http://www.child-to-child.org/about/index.html>

Chronic and acute malnutrition

Low or very low weight for height. Chronic malnutrition occurs over time, unlike acute malnutrition. For chronic malnutrition see **stunting**. For acute malnutrition see **wasting**.

Civil society organizations

The wide range of citizens’ associations that exists in virtually all countries to provide benefits, services, or political influence to specific groups within society. Some examples of civil society organizations are: charities, voluntary organisations, non-governmental organizations and housing associations.

Cochrane collaboration

An independent, non-profit, non-governmental organization consisting of more than 31,000 volunteers in more than 120 countries. It was formed to organize medical research information in a systematic way to enable health professionals, patients and policy makers to make evidence-based choices. “Cochrane Reviews are systematic reviews of research in human health care and health policy, and are internationally recognised as the highest standard in evidence-based health care.” They are published online in the Cochrane Library.

<http://www.cochrane.org/cochrane-reviews>

Colour coding of fruit and vegetables

Eating fruits and vegetables of different colours gives a range of valuable nutrients and possible health benefits.

Colour	Phytochemical	Fruits & Vegetables	Possible health benefits
Red	Lycopene	tomatoes, watermelon, beetroot	<ul style="list-style-type: none"> Helps fight types of cancer Reduces “bad” LDL cholesterol
Blue/ Purple	Anthocyanins Polyphenols	berries, grapes, dark cherries, prunes, blackcurrants, red apples, figs	<ul style="list-style-type: none"> Antioxidant (gloss) properties Anti-bacterial properties Anti-inflammatory properties Protects against the effects of ageing.
Orange	Alpha & Beta Carotene Vitamin C	carrots, mangos, pumpkin, oranges, apricots, sweet potato, rock melon	<ul style="list-style-type: none"> Antioxidant Lowers cholesterol level Protects skin against free radical damage Repairs damaged DNA Improves immune system
Orange/ Yellow	Beta-cryptxanthin (Vitamin A-forming carotenoid)	cantaloupe, peaches, oranges, papaya, persimmons, red sweet peppers, pumpkin.	<ul style="list-style-type: none"> Essential for eyesight, growth, development, and immune system Protects against some cancers and other degenerative diseases Helps in bone formation and reduces bone loss with age
Yellow/ Green	Lutine & Zeaxanthin	spinach, avocado, bananas, honeydew melon, yellow capsicum	<ul style="list-style-type: none"> Helps maintain healthy eyesight Helps prevent heart disease, stroke, and lung cancer Protects against some types of skin conditions
Green	Isothiocyanate Glucosinolates Indoles Folic Acid Sulforaphane	broccoli, cabbage, spinach, peas, artichokes, asparagus	<ul style="list-style-type: none"> Helps prevent cancer, especially colon cancer Helps prevent birth defects such as spina bifida
White/ Green	Allyl Sulphides Flavonoids Allicin	leeks, onion, garlic, chives	<ul style="list-style-type: none"> Helps prevent cancer Helps prevent heart disease Helps in respiratory problems like asthma Reduces effects of colds and flu

Adapted from: Canoe Network (n.d.), ExRx.net (n.d.), and McGuiness (n.d.)

Community growth promoters

In most community “child survival” programs, it is someone’s job to promote good child feeding in some way. This job is mainly education. Here for example is the job description of a “community growth promoter” employed by an NGO (ACC/SCN 2001):

- Assist each mother in weighing her child and plotting the weight on the growth chart
- Help the mother to interpret the growth pattern and diagnose problems
- Discuss causes of problems with the mother, and refer her to appropriate program activities, including health consultation and supplementary food.
- Counsel her on what she can do at home to help her child
- Make home visits to children not growing well and provide encouragement to the mother.

Complementary feeding

When breast milk is no longer enough to meet the infant’s nutritional needs, “complementary foods” should be added to the diet. Complementary feeding (typically from 6 to 18-24 months), is a very vulnerable period, when malnutrition starts in many infants, hence the high prevalence of malnutrition in children under five world-wide. WHO recommends that infants start receiving complementary foods at 6 months of age in addition to breast milk, initially 2-3 times a day between 6-8 months, increasing to 3-4 times daily between 9-11 months and 12-24 months with additional nutritious snacks offered 1-2 times per day, as desired.

Several courses and manuals on CF have been developed by the WHO, see ‘Infant young child feeding counselling: An integrated course’ (WHO/UNICEF 2006), and WHO’s page on complementary feeding at http://www.who.int/nutrition/topics/complementary_feeding/en/index.html.

Control group

In experiments, the aim is to see what effect a particular intervention has. The intervention is therefore carried out with a treatment group or experimental group, and the results are compared with an equivalent control group which does not receive the intervention. For example, a group of mothers in one township learn to use more legumes in family meals, while a matched group in another similar township do not. At the end of the intervention the health of children in the two groups is compared to see if the treatment group has benefited from the intervention.

Copenhagen Consensus

The Copenhagen Consensus works towards:

- providing facts on how to do the most good for the world
- cutting out special interest groups and lobbyists
- stimulating debate on solving the biggest problems.

It started in 2004 as an exercise in prioritizing global opportunities.

Experts gather together to consider the world's biggest problems and their solutions. The basic idea is: "Imagine you had \$75bn to donate to worthwhile causes. What would you do, and where should we start?"

Research papers are commissioned on the costs and benefits of solutions to different global challenges and a prioritized list of solutions to the challenges shows which are the most cost-effective investments. The list is utilized by donors, governments and philanthropists. The 2008 list recommended a greater focus on battling malnutrition with micronutrients.

<http://www.copenhagenconsensus.com/>

Core Group

See **Child Survival Collaborations and Resources Group**.

Cornell Nutrition Works

An interactive, web-based continuing professional education program for nutrition and health practitioners sponsored by the Division of Nutritional Sciences at Cornell University. Topics include food, nutrition and health issues in developing countries. Cornell Nutrition Works uses distance technology to provide an affordable and convenient way to meet professional development needs.

www.nutritionworks.cornell.edu

Cost-effectiveness

Impact per dollar spent, or "value for money". Cost-effectiveness is the relationship between what you spend and what you get. A very cost-effective intervention would be (for example) a reduction in child mortality at a cost of \$1 per child per year. Cost-effectiveness is clearly related to **sustainability**: some nutrition education activities, e.g. developing big media campaigns or training hundreds of extra temporary staff, may be very effective but also very expensive, hence not very cost-effective or very sustainable.

Cost of the Diet

A survey instrument developed by Save the Children UK. It calculates the cost of the cheapest diet that meets the nutritional requirements of families using only foods available locally. It can also be used to estimate

- the proportion of households in a region that are unable to afford a nutritious diet
- the size of the gap between current income and the amount of money needed to meet the needs of a household
- which vitamins and minerals are lacking in the diets of poor families.

The CoD is intended to help in program design, as part of baseline assessments and alongside nutrition/food security surveillance.

<http://www.savethechildren.org.uk/resources/online-library/the-cost-of-the-diet>

Counterfactual

A control group is sometimes referred to as the “counterfactual” because it is supposed to represent how the experimental group would be if there had been no intervention.

Curriculum planning guide

School nutrition education seems an obvious thing to do but it is difficult to develop approaches that will guarantee impact on practices. For this reason the FAO (2005) has developed ‘Nutrition Education in Primary Schools: a planning guide for curriculum development’ which embodies some of the good practices revealed by years of experimentation: for example, a full participatory needs assessment; involvement of the family, the community and the whole school environment; hands-on approaches and full engagement; outreach activities in the school and community; and passing on learning.

Dietary diversity

The variety of foods from different food groups consumed. A diet with high diversity is thought to have good chances of providing adequate nutrients for a healthy, active life. Dietary diversity scores at household or individual level are therefore used to measure the nutritional adequacy of diet. They can be assessed by a dietary diversity survey (see below).

See ICN2 Glossary at:

<http://www.fao.org/faoterm/collection/nutrition/en/>

Dietary diversity survey (DDS)

The dietary diversity survey is a rapid, easily administered low-cost assessment tool. It measures the access to food at household level and

micronutrient adequacy of diets at individual level. Information is gathered on all the foods and drinks consumed over the previous 24 hours, which are then classified into standard food groups. The dietary diversity scores are the simple count of these food groups. This tool is useful for ensuring that nutrition education programs effectively lead to more nutritious diets. It can be integrated easily into impact evaluation protocols. (Kennedy et al. 2010)

Donors

Organizations which provide development aid.

EFNEP

See **Expanded Food and Nutrition Education Program**.

Endline study

See **baseline and endline studies**.

Energisers

Short games and activities done by a group for breaking up a session, changing focus, relaxing, stretching etc. See also **icebreakers**. Two examples:

- **Sevens**. Stand in a circle. Start counting round the circle. Counters skip any numbers which have a seven in them or are multiples of seven – e.g. 7, 14, 17, 21 etc. Anyone who says one of these numbers by mistake drops out of the circle until only the winner is left.
- **Fruit basket**. Participants mime picking fruits from their garden and putting them into a fruit basket. The leader mentions a fruit, interchanging fruits plucked from overhead (oranges, guavas) with those picked up from the ground or from bushes (watermelon, berries). This gives plenty of stretching and bending. When all the fruits have been collected, participants arrange their fruit baskets and decide who to give them to as a token of appreciation.

Enumerators

People who collect data for a census, survey or other research.

Environmental constraints

In nutrition and nutrition education, blocks to adopting good food and eating practices which come not from knowledge, motivation, habit or attitude but from outside influences such as lack of access to the right foods, poor health services, or adverse weather for crop production.

Essential Nutrition Actions (ENA)

Developed with the support of USAID, the ENA framework has been implemented across Africa and Asia since 1997. It promotes a “nutrition through the life cycle” approach, addressing women’s nutrition during pregnancy and lactation, optimal IYCF (breastfeeding and complementary feeding), nutritional care of sick and malnourished children (including zinc, vitamin A and ready-to-use therapeutic foods), and the control of anaemia, vitamin A and iodine deficiencies. Using multiple contact points, the initiative targets health services and **behaviour change communication** support during the first 1000 days of life when nutrient requirements are increased, the risks of undernutrition are great, and the consequences of deficiencies most likely to be irreversible. (Guyon & Quinn 2011)

Evaluation

A purposeful, systematic and careful collection and analysis of information used for the purpose of documenting the effectiveness and impact of programs, establishing accountability and identifying areas needing change and improvement. (Wall n.d.)

Expanded Food and Nutrition Education Program (EFNEP)

A federally funded educational program conducted through the Cooperative Extension Service throughout the United States. EFNEP has for many decades run nutrition education classes for low-income families across the US. Its regular evaluations show that it achieves significant reductions in food insecurity and improvements in dietary and food-related practices among its participants, for example reading food labels, stretching food budgets, following dietary recommendations, handling food more safely.

<http://www.csrees.usda.gov/nea/food/efnep/efnep.html>

Family nutrition education

There has been a reduction in food and nutrition knowledge and skills in the general public. “Home cooking” for example has diminished due to women working more and longer, resulting in less time for food preparation, less in-home food mentoring (the passing down of cooking skills between generations) and the easy availability of ultra-processed convenience and fast foods, which has reduced the need for in-home food planning and preparation from basic ingredients (Slater 2013). Girls (and more recently boys) traditionally received cooking instruction from Home Economics courses in school but now there is a gap in educational curricula. Successful community education programs like

EFNEP are attempting to fill this gap by providing family nutrition education. For example, in the EFNEP-Iowa program participants learn how to:

- budget their food dollars
- save time and money by planning meals
- stay healthy by making wise food choices
- keep food safe to eat
- feed their children
- increase physical activity
- prepare healthy snacks.

<http://www.extension.iastate.edu/humansciences/nutrition-education>

Farmer Field Schools (FFS)

An FAO initiative in which groups of farmers meet regularly in their own fields to learn about crops and what affects them. These “schools without walls” are based on the concepts and principles of people-centred learning. They use innovative and participatory methods to create a learning environment, including learning networks, in which the farmers have the opportunity to learn for themselves about particular crop production problems, and ways to address them, through observation, discussion and participation in practical learning-by-doing field exercises. Many Farmer Field Schools are also building nutrition into their curriculum.

<http://www.fao.org/nr/land/sustainable-land-management/farmer-field-school/en>

Federation of African Nutrition Societies (FANUS)

The Federation of African Nutrition Societies. FANUS organizes conferences that bring together professionals working in or with an interest in nutrition in Africa.

<http://www.africanutrition.org/contact.html>

First 1 000 Days

The 1 000 days from the start of a woman’s pregnancy until her child’s second birthday is the “window of opportunity” for shaping healthier and more prosperous futures. The right nutrition during this 1 000-day window can have an enormous impact on a child’s ability to grow, learn, and rise out of poverty. It can also have a profound effect on the long-term health, stability, and development of entire communities and nations.

<http://www.thousanddays.org/>

Five A Day

Programs to encourage the consumption of at least five portions of fruit and vegetables each day, prompted by a WHO recommendation that individuals should consume at least 400g of vegetables daily. The Five A Day message is generally tied to health benefits, specifically that eating more fruit and vegetables reduces the risk of heart disease and cancer. Five A Day campaigns have been run in many western countries (e.g. the USA, the United Kingdom, Germany, Poland and Spain) and in Latin American countries (e.g. Chile, Argentina, Mexico, Brazil, Venezuela). Some campaigns have had more success, and longer-term success, than others. (Wikipedia 2015b)

Focus group discussion (FGD)

A discussion among a small number of participants (6–8), guided by a skilled moderator, which aims to discover insights related to a research question. They are called “focus groups” because the discussion topic is usually narrow (Dickins et al. 1997). This method is often used in planning nutrition programs: for example, when designing a program for adults with Type 2 diabetes, a focus group with adults with Type 2 diabetes is held to find out about their current diets etc. (Cullen n.d.)

Focusing Resources on Effective School Health (FRESH)

An initiative by several international agencies which focuses on a package of actions for improved school health, such as water supply, sanitation, immunization and school feeding. FRESH has identified a core group of activities that capture the best practices from program experiences for improved school health.

<http://www.freshschools.org/Pages/default.aspx>

Fome Zero (The Zero Hunger Project)

Fome Zero is a Brazilian government program introduced by President Lula da Silva in 2003 with the aim of eradicating hunger and extreme poverty in Brazil. As a result Brazil managed to achieve the first goal of the **Millennium Development Goals** (reducing extreme poverty by half between 1990 and 2015) ten years before the deadline.

<http://www.fao.org/docrep/016/ap339e/ap339e.pdf>

Food-based dietary guidelines (FBDGS)

Food-based dietary guidelines give a set of easily understood food rules for the general population, based on local needs and practices. They provide information to help people make healthy food choices and thus achieve a healthy diet and often also have a visual guide, such as a food

pyramid or food plate, which show the foods in each category and the recommended proportions of each food group. Nutrition educators need to consider how FBDGs can be practically implemented, i.e. how they should be used and activated.

<http://www.fao.org/ag/humannutrition/nutritioneducation/fbdg/en/>

Food groups

Some examples of food groups are cereals, oils and fats, vegetables, legumes, fruits, meat and fish, milk and milk products and sugars. However foods can be grouped in a variety of ways. Common groupings are:

- botanical (cereals, fruits, leafy vegetables, fruit vegetables, oilseeds, roots and tubers)
- nutrient-based (all foods high in protein, all high-energy foods etc.)
- consumption-based as customary elements of the diet (e.g. staples such as grains, roots or tubers; relishes (vegetables etc). In this system, potatoes, tomatoes and greens can all be seen as “vegetables”.
- functional e.g. energy-giving foods, foods for growth and development, health protection foods (Go, Grow, Glow). This popular classification is an over-simplification, and can also be misleading because most foods contain a mix of different nutrients, not just one key nutrient, and therefore have many functions.

In any educational activity, the important thing is to be sure that everyone has the same idea in mind when talking about food groups.

Food insecurity

A situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life. Food insecurity may be chronic, seasonal or transitory. It may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level. Food insecurity, poor conditions of health and sanitation, and inappropriate care and feeding practices are the major causes of poor nutritional status.

Examples of situations of food insecurity:

- food is generally not sufficient
- food is not safe
- food is not adequately nutritious
- particular foods are not available
- people do not have access to food (although it is available)
- sufficient food is not available at certain times of year
- people do not make good use of the foods available
- people’s bodies cannot make use of the food.

Food labelling

Food labelling can provide consumers with the information they need to make healthy food choices, provided consumers have learned how to interpret them. In general, consumers should try to select foods that are low in saturated fats, trans fats, cholesterol, salt and sugar, and high in calcium, vitamin A, D and other micronutrients, and dietary fibre.

Label information is generally given in values per 100 g or 100 ml. Some manufacturers may also give values per food portion (e.g. 2 biscuits).

Information may be given on

- energy, protein, fat, carbohydrates, fibre, sugar and salt
- micronutrient content, especially where the product has been fortified
- different types of fat and fatty acids (saturated, polyunsaturated, mono-unsaturated, cholesterol, **hydrogenated fats** or **trans fats**; **omega-3**, omega-6, etc.)
- Recommended Nutrient Intakes (RNI) or Recommended Daily Amounts (RDA). These are estimates of micronutrients that are needed daily to meet the nutrient requirements of almost all healthy individuals of an age- and sex-specific population group.

Food security

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Committee on World Food Security, see <http://www.fao.org/cfs/cfs-home/it/>). If people are “food secure” it means that they have access to sufficient safe and nutritious food throughout the year so that all members can meet their nutrient needs with foods they like/prefer for an active and healthy life. (Burgess & Glasauer 2004)

Food variety score (FVS)

The number of different food items consumed over a period (e.g. a day, a week, a month, a year). Frequency of consumption and amount of food consumed are not taken into account and no judgements are made whether the foods are “healthy” or “unhealthy”. Different food intake instruments (e.g. food frequency questionnaires, dietary recall and dietary record) can be used to calculate food variety scores. See also **dietary diversity**. (Hodgson et al. 1991, 1994)

Formative research

Investigations conducted for program design and planning before or during a program. Methods may be quantitative or qualitative. Formative research looks at the community in which a program is situated and helps program planners understand the interests, attributes and needs of different populations and persons in their community. (CAPS 1998; see also Dickins et al. 1997)

Goal

A long-term aim. In projects, a goal is usually a broad aim which the project contributes to but cannot achieve by itself in the time frame. For example, a nutrition education project may try to improve diet with the long-term goal of preventing NCDs or improving national health.

Hard data

See **quantitative data**.

Health-Promoting Schools Movement

Started by WHO, regional networks for the development of Health-Promoting Schools have been initiated in Europe, Western Pacific and Latin America. A “health-promoting school” is one that is constantly strengthening its capacity as a healthy setting for living, learning and working, focusing on:

- caring for oneself and others
- making healthy decisions and taking control over circumstances
- creating conditions that are conducive to health (through policies, services, physical/social conditions)
- building capacities for peace, shelter, education, food, income, a stable ecosystem, equity, social justice, sustainable development
- preventing leading causes of death, disease and disability (e.g. parasitic worms, tobacco use, HIV/AIDS/STDs, sedentary lifestyle, drugs and alcohol, violence and injuries, unhealthy nutrition)
- influencing health-related behaviours: knowledge, beliefs, skills, attitudes, values, support.

http://www.who.int/school_youth_health/gshi/hps/en/index.html

Health promotion

Health Promotion has been defined in the Ottawa Charter (WHO 1986) as “the process of enabling people to increase control over and to improve their health”. It follows a set of principles which centre on how people live and what they decide to do. Self-determination and participation are central: “*health promotion is not something that is done on or to people;*

it is done by, with and for people". Its main strategies are advocacy for health; enabling all people to achieve their full health potential; and mediating between different interests in the pursuit of health. It gives particular attention to the environment of behaviour change and the context of public action: building health policies, creating supportive environments, strengthening community action, and reorienting health services. In this "ecological" perspective nutrition education is not a purely individual matter, but is influenced by social policies and institutional actions (McLeroy et al. 1988). Health promotion approaches also emphasize skills development and practice, including life skills, and learning from and with others.

Health promotion glossary

The "WHO health promotion glossary" is available on the WHO website. It was written to facilitate understanding, communication and cooperation among those engaged in health promotion at the local, regional, national and global levels (e.g. between United Nations and other agencies and the growing numbers of practitioners and organizations working in the field of health promotion). Two editions of the Glossary have been released, the first in 1986 and the second in 1998.

<http://www.who.int/healthpromotion/about/HPG/en/>

Hearth Model

See **Positive Deviance**.

Hidden hunger

A chronic lack of vitamin(s) and/or mineral(s) often with no visible signs, so that those affected, or those who observe them, may not be aware of it (Adapted from FAO Nutrition Division, 2013) (see ICN2 Glossary at: <http://www.fao.org/faoterm/collection/nutrition/en/>). In other words, hunger is "hidden" when the diet is sufficient in quantity but not in quality (e.g. deficient in essential micronutrients), and the effects are not immediately seen or felt.

See UNICEF audio clip on hidden hunger:

http://www.unicef.org/nutrition/index_hidden_hunger.html

Home economics

See **family nutrition education**.

Home-grown school feeding (HGSF)

School feeding programs that provide food produced and purchased within a country. WFP has collaborated with the Bill and Melinda Gates

Foundation, the New Partnership for Africa's Development (NEPAD) and other partners to develop an approach to HGSF which focuses on linking school feeding programs with production by local small-scale farmers. In-depth case studies are available for HGSF Programs in Brazil, Ghana, India and Thailand.

<http://www.wfp.org/content/home-grown-school-feeding>

Homestead food production (HFP)

Production of food by small farmers around their homes for both sale and home consumption. HFP programs help improve communities' local food production systems by creating year-round gardens with micronutrient-rich fruits and vegetables and small farms for raising poultry and livestock. There is evidence that such gardens, coupled with nutrition education, are a good entry point for enriching family diet. They also empower women, who organize most home gardens. Helen Keller International has been implementing homestead food production programs in several countries such as Bangladesh, Cambodia, Nepal and the Philippines.

<http://www.hki.org/reducing-malnutrition/homestead-food-production/>

Household food security

Household food security refers to the ability of a household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of all members of the household. The food available to the household must be shared according to individual needs; the food must be of sufficient variety, quality and safety; and each family member must have good health status in order to benefit from the food consumed.

An index for assessing national household food security may be made up of individual indicators such as

- food production per head
- export earnings per head
- the percentage of national income received by the lower 40 percent of the population
- budget allocation for targeted income transfers and food subsidies
- food price inflation for low-income households.

http://www.fao.org/ag/agn/nutrition/household_en.stm

Household food insecurity access scale (HFIAS)

A household's level of food insecurity is characterized by a set of indicators of conditions, experiences, and behaviour patterns. The HFIAS questionnaire asks respondents to describe their behaviours and attitudes towards the experience of food insecurity. Responses to the

questions are summarized on a scale to give an indicator of the degree of a household's food insecurity. These data are used to monitor food assistance programs and to report on national prevalence of household food insecurity. (Coates et al. 2007)

<http://www.fantaproject.org/monitoring-and-evaluation/household-food-insecurity-access-scale-hfias>

Hunger

An uncomfortable or painful sensation caused by insufficient food consumption. It is also used to refer to conditions resulting from food deprivation and famine (See ICN2 Glossary at: <http://www.fao.org/faoterm/collection/nutrition/en/>). In food security discussions and in **Millennium Development Goal 1**, hunger is estimated in energy intake only (kcal), without particular reference to physical effects or dietary quality. It is one of the tasks of nutritionists to make sure that dietary quality is assessed as well as simple energy intake.

Hydrogenated fat

A form of fat made by adding hydrogen to vegetable oil through a process called hydrogenation. This makes the oil less likely to spoil, giving processed foods a longer shelf life. Hydrogenated fat is found in margarine, biscuits, cakes, frozen meals, fried foods, sweets, crisps, fish fingers and many dairy products. The process causes several chemical changes, including the creation of **trans fats**. Hydrogenated fats raise the levels of "bad" cholesterol, which increases the risk of heart attack and stroke.

Icebreakers

Icebreakers are short activities intended to help people to get to know each other at the beginning of a meeting or course. They are also used in online environments. See also **energisers**. An example:

- Who am I? People form groups of 3 or 4. They introduces themselves one by one with descriptions of food items, such as a vegetable or fruit. The others try to guess the food being introduced. For example: *"I am edible. I am actually a fruit but I am often eaten as a vegetable. Some people think I am an unhealthy food. Health workers sometimes compare my shape with another fruit to describe people's risk for certain diseases. Who am I?"* (Answer: Avocado pear)

IFAVA

See **International Fruit and Vegetable Alliance**.

I-LIFE Malawi

The Improving Livelihoods through Increasing Food Security (I-LIFE) Program in Malawi was a large food security project with a number of activities including agricultural training, reforestation, irrigation, village savings and loan, growing and marketing legumes and oilseeds, rearing poultry and infrastructure construction. It also had a social welfare component including community nutrition education and home-based care. The nutrition education focused on breastfeeding and complementary feeding, reaching nearly 10 000 children in 109 care groups.

<http://www.ei-malawi.org/programs/ilife.html>

Impact assessment

The systematic analysis of lasting or significant change in people's lives – positive or negative, intended or not – brought about by an intervention. (Roche 1999, O'Flynn 2010). Impact assessment is often done some time after the end of an intervention: for example, the impact of a breast-feeding campaign might be assessed five years after the campaign. Impact assessments may show that the effects have been maintained, have diminished, or have increased, or that there have been unintended side-effects. For example, an income generating project for women in Tanzania was successful in providing women with money to use for feeding and educating their children. However, the impact assessment showed that an unintended and negative impact of the project was that some women were forced to hand over their earnings to their husbands who used the money as they saw fit.

Implementing agency

Any organization which carries out an intervention.

Indicator

A characteristic of an individual, population, or environment which can be measured (directly or indirectly). Health indicators can be used to define public health problems at a particular point in time, to indicate changes in people's health, to compare the health of different populations, and to assess how far the aims and objectives of an initiative are being reached. For example, growth in young children is an indicator of health. In a nutrition education intervention an outcome indicator could be a 20% rise in market sales of dark-green leafy vegetables, which would indicate a change in dietary practices. High attendance at community group meetings could be a process indicator which shows that the program is going as planned.

Indicators are often required to be “SMART”, i.e. specific, measurable, attainable, relevant and timebound.

Infant and young child feeding (IYCF)

Interventions that focus on the impact that feeding practices have on the nutritional status, growth and development, health, and hence the survival, of infants and young children.

Information, education, communication (IEC)

The term IEC was originally supposed to cover all kinds of communication in the field of public education. But it has come to be associated with putting out printed information material (e.g. leaflets, posters) because that is mostly what has been done under this name.

International Fruit and Vegetable Alliance (IFAVA)

IFAVA aims to encourage the consumption of food and vegetables globally for better health. It is an association of national and international groups involved in research, fundraising and promotion of fruit and vegetables. IFAVA supports its members by supplying scientific information, resources, forums, communication tools and a “5 A Day” starter toolkit in collaboration with the World Health Organization.

<http://www.ifava.org/about-ifava/>

International non-governmental organizations (NGOs)

See **non-governmental organizations**.

International Union of Nutrition Sciences (IUNS)

The main interest of IUNS is nutrition science and research. Its mission is "to promote advancement in nutrition science, research and development through international cooperation at the global level", and it aims "to encourage communication and collaboration among nutrition scientists as well as to disseminate information in nutritional sciences through modern communication technology". Unfortunately its several task forces do not yet include one on nutrition education or health promotion.

Iodine deficiency

A lack of sufficient iodine in the body. Goitre is usually the earliest clinical sign of iodine deficiency. Iodine deficiency has many adverse effects on growth and development and is the most common cause of preventable mental retardation in the world. In pregnant women, severe chronic iodine deficiency can cause major damage to the development and

growth of the foetus, as well as miscarriage, stillbirth and mental defects. In infants and children, less severe iodine deficiency can reduce IQ. In adults, mild-to-moderate iodine deficiency can cause goitre as well as impaired mental function and work productivity.

Iodine is found mainly in seafood. Many countries adopt a policy of promoting or providing iodised salt. Awareness of the need for iodised salt is often an important element in the nutrition education agenda.

Iron deficiency anaemia (IDA)

A low level of iron in the blood. Women of childbearing age, pregnant women, preterm and low birth weight infants, older infants and toddlers, and teenage girls are at greatest risk of IDA because they have the greatest need for iron.

Signs of iron deficiency anaemia include feeling tired and weak, poor work and school performance, slow cognitive and social development during childhood, difficulty maintaining body temperature, and decreased immune function, which increases the risk of infection.

Nutrition education is needed to enable people to recognize the symptoms of anaemia, know how to prevent it with an iron-rich diet and often to understand the value of iron tablets and to complete the course.

J-PAL

The Abdul Latif Jameel Poverty Action Lab. J-PAL was established in 2003 at the Massachusetts Institute of Technology. It is a global network of researchers who use randomized evaluations to answer critical policy questions in development. Its mission is to reduce poverty by ensuring that policy is informed by scientific evidence.

<http://www.povertyactionlab.org/>

Junior farmer field and life schools (JFFLS)

To address youth unemployment, Junior Farmer Field and Life Schools have been established in 15 African countries. Here young people (15-18) learn to grow healthy crops in the field while making informed decisions for leading healthy lives. For a whole school year, they study agriculture and life skills in the field or in the classroom two or three times a week after regular school hours. Activities include growing crops and medicinal plants and income generation; local theatre, art, dance or song; and discussion of issues such as gender sensitivity, child protection, psycho-social support, health, hygiene, sanitation and business skills. There is also a nutrition education component dealing with food composition and the importance of good diet, although this component is not as extensive or as hands-on as the agricultural element.

<http://www.fao-ilo.org/fao-ilo-youth/fao-ilo-iffls/en/>

Knowledge, Attitudes, Practices (Perceptions) (KAP(P))

KAP stands for Knowledge, Attitudes and Practices. Sometimes an extra P is added for Perceptions, making KAPP. (Attitudes generally involve emotions or values - e.g. vegetables are low-class food - while perceptions are about how people see facts - e.g. fruit is not really a food - but there is some overlap.)

Before planning action in nutrition or health education, it is important to find out what people know, feel, do and think. KAP(P) surveys are therefore a basic early step in assessing the outlook and practices of the target population of an intervention, and help to determine appropriate intervention strategies to address specific needs. Practical survey tools:

- ‘Guidelines for assessing nutrition-related Knowledge, Attitudes and Practices’ (Fautsch-Macías & Glasauer 2014), a reference guide and practical tool for conducting high-quality surveys of nutrition- and health-related knowledge, attitudes and practices at the community level
- informal KAPP questionnaires for assessing school situations, in the ‘Nutrition Education Curriculum Planning Guide’. (FAO 2005)

Lancet Series

The Lancet Commissions Series aim to highlight clinically important topics and areas of health and medicine often overlooked by mainstream research programs and other medical publications. Many of the Series have the specific aim of raising the profile of these neglected areas as an advocacy tool to inform health policy and improve human development. A groundbreaking Series in 2008 highlighted the urgency and gravity of maternal and child undernutrition worldwide. "Nutrition is a desperately neglected aspect of maternal, newborn, and child health. The reasons for this neglect are understandable but not justifiable."

(<http://www.thelancet.com/series/maternal-and-child-undernutrition>)

The 2008 series proposed a set of evidence-based cost-effective prevention measures, including nutrition education, which inspired many current global nutrition actions.

Learning outcomes

Often used in educational contexts as a substitute for “objectives”. This is done to ensure that the objective represents an actual end-result (e.g. people eat more eggs) and not just an intention or a communicative activity (e.g. to inform people about eggs through talks and demonstrations).

Life skills

Life skills are the capacities that enable people to manage their lives – for example dealing with other people, coping with problems, making decisions, weighing up situations (see WHO table below). In nutrition education they are particularly important because food and diet involve a lot of decisions, self-management and social influences.

Communication and interpersonal skills	Decision-making and critical thinking skills	Coping and self-management skills
<p>Interpersonal communication skills</p> <ul style="list-style-type: none"> - verbal/nonverbal communication - active listening - expressing feelings - giving feedback (without blaming) and receiving feedback <p>Negotiation/refusal skills</p> <ul style="list-style-type: none"> - negotiation and conflict management - assertiveness skills - refusal skills <p>Empathy building</p> <ul style="list-style-type: none"> - ability to listen, understand others' needs and circumstances, and express that understanding <p>Cooperation and teamwork</p> <ul style="list-style-type: none"> - expressing respect for others' contributions and different styles - assessing one's own abilities and contributing to the group <p>Advocacy skills</p> <ul style="list-style-type: none"> - influencing skills and persuasion - networking and motivation skills 	<p>Decision-making/ problem-solving skills</p> <ul style="list-style-type: none"> - information-gathering skills - evaluating future consequences of present actions for self and others - determining alternative solutions to problems - analysing the influence on motivation of values and attitudes about self and others <p>Critical thinking skills</p> <ul style="list-style-type: none"> - analysing peer and media influences - analysing attitudes, values, social norms, beliefs, and factors affecting them - identifying relevant information and sources of information 	<p>Skills for increasing personal confidence and ability to assume control, take responsibility, make a difference, or bring about change</p> <ul style="list-style-type: none"> - building self-esteem/confidence - creating self-awareness skills, including awareness of rights, influences, values, attitudes, strengths and weaknesses - setting goals - self-evaluation/self-assessment/self-monitoring <p>Skills for managing feelings</p> <ul style="list-style-type: none"> - managing anger - dealing with grief and anxiety - coping with loss, abuse and trauma <p>Skills for managing stress</p> <ul style="list-style-type: none"> - time management - positive thinking - relaxation techniques

(WHO 2003)

Likert scale

A rating scale used in surveys to measure opinion, knowledge or attitudes. It consists of a statement with (usually) five possible responses ranging from very negative to very positive. Young children may choose faces with smiles or frowns instead of words. Example:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pumpkin is a very good food					

Literature review

In a literature review, researchers make a systematic search for books/ articles/reports produced over a certain period on a given subject, read them and summarize the findings, to draw some conclusions about what is known and what has been done before.

Logical framework (LogFrame)

Program logic sets out what a project will do and how it will do it. It represents a theory of how things change, a set of assumptions about what will happen. These are reflected in a matrix called a LogFrame (Logical Framework) which is used as a design methodology for development projects.



The LogFrame spells out the assumptions that have been made about how results will be achieved. It says:

- If these activities are implemented and these assumptions are true, then these outputs will be delivered.
- If these outputs are delivered and these assumptions are true, then this purpose will be achieved.
- If this purpose is achieved and these assumptions are true, then this goal will be achieved.

Mentoring

A relationship in which a more experienced or more knowledgeable person guides a less experienced or less knowledgeable person to do something. Mentoring can be short-term or long-term, informal or organized. In nutrition education it is an important way of building good practices: for example older schoolchildren can be assigned to mentor younger children in handwashing; trainee facilitators act as assistants to more experienced ones before taking over themselves; senior women in the community act as mentors to new young mothers about good feeding practices.

Micronutrients

The vitamins, minerals and other substances (e.g. amino acids, fatty acids or other biological compounds) that are required by the body in small amounts and are essential to its proper functioning. They are measured in milligrams or micrograms. They are found in a wide range of foods, which is one of the reasons why variety in the diet is so important. See ICN2 Glossary at: <http://www.fao.org/faoterm/collection/nutrition/en/>.

Microcredit

Small loans for the poor. Microcredit schemes aim to help the rural poor escape poverty by investing in their own small businesses and farms. To overcome some of the problems of delivering rural credit to the poor they offer collateral-free loans at near-market interest rates through community-based programs operated by financing institutions or non-governmental organizations (NGOs). Several programs and projects have linked microcredit for women with nutrition education (e.g. the ENAM project in Ghana).

Millennium Development Goals (MDGs)

Eight goals that United Nations member states agreed to try to achieve by the year 2015. They were officially established at the Millennium Summit in 2000. New goals were established in 2015.

<http://www.fao.org/mdg/goalone/en/>.

	1 <u>Goal 1</u> : Eradicate extreme poverty and hunger		5 <u>Goal 5</u> : Improve maternal health
	2 <u>Goal 2</u> : Achieve universal primary education		6 <u>Goal 6</u> : Combat HIV/AIDS, malaria and other diseases
	3 <u>Goal 3</u> : Promote gender equality and empower women		7 <u>Goal 7</u> : Ensure environmental sustainability
	4 <u>Goal 4</u> : Reduce child mortality		8 <u>Goal 8</u> : Develop a global partnership for Development

Nutrition activities (including nutrition education) have an essential role to play in efforts to achieve the MDGs. Good nutrition contributes enormously to the fight against poverty. It protects and promotes health; reduces mortality, especially among mothers and children; and encourages and enables children to attend and benefit from school. In addition, by indirectly strengthening communities and local economies, good nutrition contributes to the achievement of other development objectives which in turn impact upon the MDGs. (Adapted from FAO n.d.)

Mnemonic

A way of remembering something. E.g. “Go, Grow, Glow” is a mnemonic for remembering the three main functions of food (energy, growth and health).

Moderate acute malnutrition (MAM)

Defined as low weight-for-height compared to the average established by WHO. (In children it is defined as a weight-for-height between -3 and -2 z-scores of the median of the WHO child growth standards.)

See ICN2 Glossary at:

<http://www.fao.org/faoterm/collection/nutrition/en/>.

Monitoring

A check on the progress of implementation in line with established **indicators**. Careful regular monitoring can show (for example) if activities have been carried out as planned and on time, if the products are up to standard, or if the allocated budget has been spent as planned. Reasons for shortfall can then be analysed and decisions can be made about how

to bring the activities back on track. (Adapted from Wikipedia 2015d on 'Project management')

Mother-to-Mother Support Groups (MTMSGs)

Self-supporting groups of women (of any age) who meet regularly to learn about and discuss infant and young child nutrition (IYCN), and to support each other in caring for young children. These are essentially nutrition education groups. One member of each group is trained on IYCN and on basic group facilitation techniques and is responsible for engaging group members in discussion and providing basic health education in an interactive, participatory manner. Groups are often recruited using existing community groups instead of forming entirely new ones. (LINKAGES 2003)

Non-governmental organizations (NGOs)

Non-governmental organizations (NGOs) are defined as "private organizations that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, provide basic social services, or undertake community development". NGOs may be national, regional or international. Some well-known international NGOs in the field of nutrition are Oxfam, Helen Keller International, Save the Children, Concern and Action against Hunger.

North Karelia Project

A Finnish project, begun in 1972, which carried out a successful comprehensive intervention to improve diet and prevent obesity and heart disease through community organizations and the actions of the people. Dietary and lifestyle changes targeted included cutting down on butter, salt and smoking. Activities involved health services, schools, NGOs, media campaigns, supermarkets, the food industry, agriculture etc. Education was key, and there was also a strong regulatory component (e.g. food labelling, control of food in schools). The North Karelia project has been seen internationally as a "major demonstration program" of multi-component nutrition education and public action.

http://www.who.int/chp/about/integrated_cd/index2.html

Nutrition counselling cards for PLWHA

Good diet can help to delay the onset of AIDS and make life easier for people living with HIV and AIDS (PLWHA). Communication materials with a focus on Uganda have been developed by the Regional Centre for Quality of Health Care for use by counsellors with people living with HIV/AIDS. They consist of display flipcharts with clear pictures on the front and notes on the back. Apart from diet, they deal with loss of

appetite, diarrhoea, mouth sores and keyhole gardening for fresh vegetables. Each session sets up a useful discussion with plenty of questions, exchange of information and explanations. (RCQHC 2005)

Nutrition-Friendly Schools Initiative (NFSI)

An initiative aiming to provide a framework for integrated school-based programs to address nutrition-related ill health. The NFSI was set up by WHO in partnership with other UN agencies and international organizations and is modelled on the Health-Promoting Schools initiative. As in the **Baby Friendly Hospital Initiative**, a school can be accredited as “nutrition friendly” if it fulfils essential criteria such as “developing a nutrition and health-promoting school curriculum” and “creating a supportive school environment”. Even where the scheme cannot be implemented in full, it provides an agenda for raising awareness of schools, children, parents and community about the importance of good nutrition and suggests appropriate actions. (WHO n.d.-a)

Nutrition literacy

Knowing about nutrition and being able to apply the knowledge to one’s own and others’ food practices. Individuals are more easily influenced if people around them are well-informed about nutrition and share good dietary outlooks and habits. This is the long-term social goal of “nutrition literacy” (FAO 2005). Nutrition-literate people have the capacity and experience to:

- apply nutrition principles to their own situation and make informed and critical decisions about food and eating habits (e.g. choose healthy foods, resist social pressures, adapt to changes in food supply and prices, evaluate food advertising)
- influence others (e.g. siblings, peers and own children), explain diet and set an example
- see the implications of their food choices and eating habits for the environment
- protect and change the environment.

A nutrition-literate culture may be seen in school curricula and school policy; in the media; in government policy and practice; and in consensus and debate among individuals.

Nutrition Rehabilitation Centres (NRCs)

Centres for treating malnourished children. Many countries have set up NRCs where malnourished children build up their strength before returning home. Apart from correcting children’s weight deficits, NRCs are also “schools for parents”, teaching mothers to feed and care for children better.

http://www.oxfordjournals.org/our_journals/tropej/online/chapter1.pdf

Mothers may live in with their children or attend daily, help to grow garden foods, prepare meals and learn about nutrition, mixed meals, child care, farming, poultry-raising and environmental sanitation. Results of NRCs are excellent, but costs are high. (Ashworth 2001)

Obesity and overweight

Abnormal or excessive fat accumulation that may impair health. The WHO definition uses the body mass index (BMI) (weight in kilograms divided by the square of height in meters (kg/m²):

- a BMI greater than or equal to 25 is overweight
- a BMI greater than or equal to 30 is obesity.

The fundamental cause of obesity and overweight is an energy imbalance between calories absorbed and calories expended. Globally, there has been:

- an increased intake of energy-dense foods that are high in fat
- an increase in physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization.

Overweight and obesity are linked to more deaths worldwide than underweight. Raised BMI is a major risk factor for non-communicable diseases such as heart disease and stroke, diabetes, musculoskeletal disorders and some cancers.

<http://www.who.int/mediacentre/factsheets/fs311/en/>

Objective

An aim which can be achieved by specific planned activities. There are many schools of thought about how objectives should be formulated and how they relate to activities, indicators and outputs. Distinctions are made between SMART objectives, aligned objectives, program objectives, learner objectives, performance objectives and **outcomes**.

Omega-3 fatty acids (n-3 fatty acids)

Omega-3 fatty acids are a group of fats which are essential for healthy body functions and development. They are found mainly in fish oils, eggs and some oilseeds and nuts. They are important in everyone's diet but especially for pregnant women for the development of the child's brain and nervous system. (FAO/WHO 2010)

Orange-fleshed sweet potato (OSP/OFSP)

A sweet potato with orange-coloured flesh which has been bred for increased vitamin A and C. It is being promoted by aid agencies and NGOs in several African countries (e.g. Mozambique, Burkina Faso, Uganda,

South Africa, Tanzania) as a substitute for the native white-fleshed sweet potato. OSP promotion involves agricultural inputs, training, market development, and nutrition education as an essential part of the package. OSPs also have commercial appeal, as they can be made into chips, chapatis, biscuits and cakes and can be marketed through the usual outlets. (See the Helen Keller video <http://www.hki.org/our-impact/photos-and-videos#.VPXW4XzF9f1>)

Outcome

A result which reflects objectives – e.g. increased capacity in staff, clean water available and being used, improved child feeding practices or attitudes (see Logical Framework). Outcomes can relate to knowledge, skills, attitudes, values, behaviour, condition or status, and can be short-term, medium-term or long-term. Many educators prefer to talk in terms of outcomes (expressing results) rather than in terms of objectives (expressing intentions).

Outcome evaluation

Outcome evaluation, or summative evaluation, assesses the effectiveness of an intervention in producing the desired beliefs, skills, and behavioural outcomes within a target population. For example an outcome evaluation would try to find out if a breastfeeding campaign had actually increased the number of mothers adopting exclusive breastfeeding as a result of the campaign. (Adapted from CDC 2013)

Output

A product of an activity, e.g. learning materials, installation of equipment, number of people trained (see **logical framework**).

Overweight

See **obesity and overweight**.

Participatory action research (PAR)

A form of research in which participants explore their own situation in an organized way, using their own experience and observations to identify problems and try out solutions. “Communities of inquiry and action evolve and address questions and issues that are significant for those who participate as co-researchers” (Wikipedia 2015a). This approach may not be as objective as scientific research but often achieves more in terms of the education and satisfaction of the participants and can result in direct and immediate improvements in practices.

Peer education

“An approach to **health promotion** in which community members are supported to promote health-enhancing change among their peers. Rather than health professionals educating members of the public, the idea behind peer education is that ordinary ... people are in the best position to encourage healthy behaviour in each other.” (Wikipedia 2015c) Peer education has been practised for many years in the **Child-to-Child Movement** and in **Mother-to-Mother Groups**.

People living with HIV and AIDS (PLWHAs)

The vast majority of people living with HIV are in low- and middle-income countries. Sub-Saharan Africa is the region most affected, with nearly one in every 20 adults affected: 69% of all people living with HIV in the world. Nutrition education is important for PLWHAs as diet can make a big difference to the onset of the disease and its progress.

Polyunsaturated fatty acids (PUFA)

The “good fats” which decrease the risk of heart disease. It is recommended to replace SATURATED FATS in the diet with PUFA (FAO/WHO 2010). Fish, meat, poultry, and eggs are good sources of these fatty acids.

“Positive Deviance” Hearth Model (PD Hearth)

A successful approach to improving infant and young child feeding (**IYCF**), based on the idea that some solutions to dietary problems already exist within the community and only need to be discovered and shared for the community to educate itself. The Hearth Model focuses on people in poor communities who are raising healthier children by practising more successful feeding practices than the rest of the community, although with the same resources as everyone else. Mothers’ groups meet to prepare nutrition food and feed infants and share these “positive deviances”.

n.b. A “hearth” is a home fireplace. The word suggests feelings of warmth, food, home, and family. (The PD Initiative (2005), The CORE Group (2003))

Private sector

Firms and companies run by private individuals or groups, usually for profit.

Problem trees

A tool in situation analysis. In discussion a group builds up a picture of a problem, its causes and its effects in the form of a tree. The problem is the trunk, the causes are the roots and the effects are the branches, which produce other effects (the leaves). Groups add components to the tree until they are satisfied that they have fully represented the problem. They are then ready to consider solutions and actions.

Process evaluation

Evaluation of program activities to assess if they were carried out as planned, how well they worked and whether they had the intended effects. **Monitoring** during an intervention is one form of process evaluation, but the process can also be examined in retrospect, telling the story of what happened and analysing strengths and weaknesses. Some of the questions are *Who was involved? How did they react/behave? Did it go as planned? Were there unexpected obstacles or outcomes? Were changes made in the program? Should changes have been made? How could it be done more effectively?*

Program evaluation

The systematic collection, analysis and use of information to answer questions about projects, policies and programs, particularly about their effectiveness and efficiency. It covers all other forms of evaluation, and can also assess the quality of **formative research**, program design, planning, cost effectiveness and sustainability. (Rossi et al. 2004)

Program logic

See **logical framework**.

Qualitative data (soft data)

Non-numerical data reflecting attitudes, opinions, reasons, motives and behaviour, which are difficult to quantify. Methods for collecting such data are observations, case studies, focus groups etc. Example: In community meetings women explained that they spend a lot of time collecting drinking water and so have little time for personal and household hygiene.

Quantitative data (hard data)

Numerical data (e.g. counts, proportions, averages) which can be statistically analysed. Example: 40% of households spend more than 2 hours a day collecting water. Methods for collecting hard data are observations, records, structured interviews and questionnaires.

Randomized controlled trial

An experimental research intervention carried out (a) with a control group and an experimental group and (b) by selecting people randomly from a large population in order to have a representative sample. For example, a large number of households eligible for food grants are randomly divided into four groups: one group receives food, one receives vouchers to be spent on food, a third receives cash, and the last (the **control group**) receives nothing. Diets and health in all four groups are studied to see how they are affected by the different interventions. Trials like these are considered the “gold standard” of research in health education.

<http://www.povertyactionlab.org/methodology/what-randomization>

Rapid rural appraisal (RRA)

RRA explores the knowledge and opinions of rural people with group animation and direct observation, trying to arrive at insights and information in several different ways. Enquiries do not usually involve reading and writing but are physical, oral, visual and dramatic.

Ready-to-use therapeutic foods (RUTFs)

Energy-dense, micronutrient-enriched pastes, often made of peanuts, oil, sugar and milk powder. RUTFs play an important role in emergency feeding of malnourished children. However, sometimes they are also used (and even sold) for feeding normal healthy infants - a controversial practice which may prevent children and families from developing normal healthy diets, eating patterns and feeding practices.

Realia

These are real objects used in education, usually as visual aids in a classroom context - e.g. real fruits, actual advertisements or labels, cooked dishes.

Real-life resources

Real things, real people, real places, real actions in the real environment which can be used for educational purposes. For example, there is no need to use a picture of handwashing if there is a real tap nearby. Real-life learning resources have great impact, but are not always available.

Right to Food (RtF)

The right to be able to feed oneself and one’s family with dignity. This means that people must be able to acquire the food they need: that is, there must be both economic and physical accessibility. Victims of natural

or human-made disasters, armed conflicts and wars, indigenous peoples and ethnic groups, people in remote areas and other disadvantaged groups may need special attention with respect to accessibility of food.

The need for nutrition education is strongly reinforced by the concept of the Right to Food. The public requires information and training to recognize their food rights and to learn how to participate in decisions that affect their diet. States are under an obligation to provide information and education on good diet, food safety, food-borne diseases, food labelling and processing, production and preparation. In the school curriculum, integrating agriculture, food safety, environment, nutrition and health education builds citizens' capacity to achieve and maintain their own food security. Hence nutrition education is an essential vehicle for establishing food rights.

<http://www.fao.org/righttofood/right-to-food-home/en/>

Role-play

Free dialogue which explores what is normally said, or what might be said, in a problematic situation. For example, parents concerned about the food sold in the school playground might “rehearse” how to approach the headmaster about it. Unlike scripted drama, role-play has to be tried out by those concerned and does not have a pre-determined outcome.

Saturated fats, saturated fatty acids (SFA)

Saturated fat intake increases blood cholesterol levels and the risk of heart disease. Saturated fats are found in animal fats, including fatty dairy products like butter and cheese; in some vegetable oils (e.g. coconut oil), in chocolate and many processed/prepared foods. It is recommended to replace SFA in the diet with polyunsaturated fatty acids (PUFA). (FAO/WHO 2010).

Scaling Up Nutrition (SUN)

A country-led movement which unites national and international organizations and groups in working to improve health through better nutrition. SUN supports national priorities, aligns resources and fosters broad ownership and commitment to evidence-based nutrition interventions and integrating nutrition goals across sectors. The main focus has been on reducing stunting and on maternal and child health. Nutrition-sensitive programs in SUN countries include investing in early childhood care and development (pre-school age); empowering school pupils as agents for positive health and nutrition behaviour changes; and maximizing the efficiency and sustainability of school feeding with fortified staples and fresh foods from local markets.

In each country which takes part in SUN a focal point is identified and a stakeholder platform is established involving donors, government, business, civil society, technical expertise and the UN, which helps to coordinate action across the sectors, develop policy, increase resources and monitor implementation.

<http://scalingupnutrition.org/>

Scenario

An imagined setting with characters and events: “a situation that could possibly happen”.

<http://www.macmillandictionary.com/dictionary/british/scenario>

School gardens

School gardens can improve the quality of nutrition and education of children and their families, if they are well integrated with agricultural, nutrition and education programs. The main benefit is that children learn how to grow healthy food and use it for healthier eating. Fresh garden produce (e.g. fruits and vegetables) cannot feed the whole school but can contribute to an existing school meal program. School gardens also serve for personal and social development, and add a practical dimension to environmental education and biology.

<http://www.fao.org/newsroom/en/news/2005/104116/index.html>

School nutrition education

International websites

- Feeding Minds, Fighting Hunger
<http://www.fao.org/ag/humannutrition/nutritioneducation/49742/en/>
- School nutrition education
<http://www.fao.org/ag/humannutrition/nutritioneducation>
- Society for Nutrition Education <http://www.sneb.org/>

Organizations and initiatives

- The FRESH initiative - Focusing Resources on Effective School Health
- The Nutrition-Friendly Schools initiative
- The Society for Nutrition Education & Behaviour www.sneb.org

Self-efficacy

People’s belief that they can succeed in specific situations, which determines whether they will undertake change, how much effort they will make and how long they will keep trying (Bandura 1977). This may be important in nutrition education, when people who are changing their diet or their families’ diet may need encouragement, support and experience of success.

Severe acute malnutrition (SAM)

Very low weight for height compared to the average established by WHO. (Below -3z scores of the median WHO growth standards)

See ICN2 Glossary at:

<http://www.fao.org/faoterm/collection/nutrition/en/>

Service provider (SP)

An organization that provides various kinds of service. In the context of nutrition education, service providers are generally the health services and community services.

SMART indicators

See **indicator**.

Social capital

The tendency of a society or a group to cooperate for the common good. Countries with high levels of social capital tend to be more prosperous and successful.

Social and behaviour change communication

See **behaviour change communication**.

Social marketing (SM)

Social marketing is “the application of marketing principles to the design and management of social programs” (Griffiths 1993). It is a form of behaviour change approach which aims to “sell” a practice by getting the right action message to the right people through the right medium. It focuses on audience research, targeting specific groups and building client profiles; crafting convincing messages and selecting media; promoting actions which offer people real advantages and are easy to adopt; and studying the “competition”, that is, all the other actions that people may find more attractive. Andreasen (2002) gives six defining characteristics of SM:

- Behaviour change as the measure of success
- Audience research for needs assessment, pre-testing promotional ideas and monitoring
- Segmenting the audience into specific groups
- Attractive motivations
- The four P’s of marketing: produce, price, place and promotion (others include a fifth. “people”)
- Careful attention to the “competition”, i.e. the attractions of other behaviours and advertising pressures (e.g. the convenience of

cooking known dishes, the pleasure of sugary and fatty snacks, the appeal of food advertising).

Society for Nutrition Education and Behavior (SNEB)

An international networking organization for nutrition education professionals. SNEB represents the professional interests of nutrition educators in the United States and worldwide. It aims to promote effective nutrition education and communication to support and improve healthful behaviours and food systems. SNEB provides forums for sharing innovative strategies for nutrition education, expressing a range of views on important issues, and disseminating research findings. SNEB publishes the Journal for Nutrition Education and Behavior.

<http://www.sneb.org/>, <http://www.jneb.org/>

Soft data

See **qualitative data**.

Soils, food and healthy communities

A project in northern Malawi which helps farmers to improve soil fertility, food security and nutrition by cultivating perennial legumes for food and as green manure. Seed distribution and training are project activities in common with other agricultural projects, but the project has also integrated several activities to promote agricultural, nutritional and social practices which differ from other agricultural programs. Nutrition education takes the form of

- field days with field visits, speeches, drama, dances and food
- recipe days where villagers (men too) cook, learn about and eat different meals
- agricultural discussion groups for solving problems relating to agriculture and nutrition.

<http://soilandfood.org/>

Stakeholders

People, groups, organizations or institutions with an interest in the situation, the intervention and its targeted outcomes.

Stunting

Very low height for age (having a height or length for age more than 2 SD below the median of the NCHS/WHO international reference) reflecting a sustained past episode(s) of undernutrition. It is calculated by taking body measurements of height or length, age and gender. Stunting is a well-

established indicator for chronic child malnutrition and is one of the key measures of country nutrition status and overall standard of living. (WHO n.d.-b)

Sustainability

“The capacity to endure” (Wikipedia 2014a). Sustainability is a key indicator of success in nutrition education, which aims at long-term changes in practice. However, there are several kinds of sustainability:

- A sustainable nutritional improvement is one which will last. E.g. restoring malnourished infants to health involves not only treating them when they are malnourished but also making sure that they do not become malnourished again (for example by educating mothers).
- A sustainable intervention can maintain itself from normal budgets. E.g. if an intervention depends on daily visits to villages by health worker, then funds must be available to continue such visits in future.
- Sustainable behaviour change. Often people change their dietary behaviour for short periods but later go back to what they did before. Long-term impact assessment is needed to see if change is sustained.
- Sustainable nutrition education interventions. Often good-quality nutrition education talks, activities or media shows are not captured and made available to others. This is a waste of resources.

Sustainable development

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland Report 1987, <https://www.iisd.org/sd/>). It particularly applies for example to maintaining and renewing natural and mineral resources (e.g. forests, fertile soil) instead of using them up (e.g. trees for cooking fuel). This wide concept is related to the concept of **sustainable diet**.

Sustainable diet

A diet that can endure or be continued over a long period of time. A sustainable diet not only promotes good health throughout life, but also conserves and regenerates natural resources, reduces greenhouse gas emissions, preserves biodiversity and promotes access to healthy food and clean water for all.

<http://sustainablediets.com/what-is-a-sustainable-diet/>

Tertiary institutions

Institutions providing education beyond secondary school level. Tertiary institutions include colleges and universities, professional schools and

colleges, medical schools, teacher-training schools, community colleges, institutes of technology etc.

TOPS training course on behaviour change

A six-day training course on designing for behaviour change, targeting community development managers, program planners and behaviour change officers. The curriculum includes case studies, stories and examples; clarification of determinants of behaviour change and key factors; Barrier Analysis (a rapid formative research approach); a half day of field work using formative research; guidelines for selecting appropriate behaviour change activities, etc. Food Security and Nutrition Network Social and Behavioral Change Task Force (2013)

Trans fats

When vegetable oils are processed to make them "harder" (e.g. for use in margarines), some of the unsaturated fatty acids are changed into trans-fatty acids as the oils become partially **hydrogenated**. These trans-fatty acids are harmful to health (increasing the risk of heart disease) as they reduce the 'good' cholesterol and increase the 'bad' cholesterol in the body. Industrial trans fats are found in deep-fried and baked foods. Naturally occurring trans fats are found in small amounts in dairy products, beef, veal, lamb and mutton, but these are not thought to increase the risk of heart disease. (Adapted from FAO/WHO 2010)

Trials of Improved Practices (TIPs)

A formative research process which aims to identify feasible, acceptable and effective strategies to improve feeding practices. TIPs projects research the practices and perceptions of the community and its food resources and identify locally available nutrient-dense foods. Families try out complementary feeding dishes and their responses are used to design acceptable recipes. The TIPs field work consists of several home visits. In the initial visit the family food security situation, feeding behaviours and dietary intake are analyzed. In following visits the current feeding practices are evaluated, and changes in behaviour and feeding practices are discussed and negotiated with the family, who then try out one or two new practices. Successful messages and practices are then disseminated throughout the community.

http://www.manoffgroup.com/approach_developing.html

A manual for TIPs trainers and implementers (FAO 2011b):

<http://www.fao.org/docrep/014/am869e/am869e00.htm>

Triangulation

To increase the reliability of data, it is recommended to get information from more than one source, or in more than one way (e.g. information about home cooking could come separately from observation and from different members of the household). This is called “triangulation”.

Twenty-four-hour recall

A method of collecting detailed information about diets. The 24-hour dietary recall consists of listing foods and beverages consumed the previous day or in the 24 hours before the recall interview. Foods and amounts are recalled from memory with the aid of a trained interviewer. Sometimes the recall is self-administered, but this approach may not yield reliable data. Before-and-after diet recalls can be used to evaluate the effectiveness of nutrition education and other interventions.

- ‘24-Hour Food Recall Introduction’ on <http://www.youtube.com/watch?v=wqRwO-wl3Hg>
- ‘Procedures for Collecting 24-Hour Food Recalls’ at <http://www.csrees.usda.gov/nea/food/efnep/ers/documentation/24-hour-recall.pdf>

Underweight

Low weight for age in children and BMI <18.5 in adults, resulting from inadequate food intake, past episodes of undernutrition or poor health conditions.

United Nations agencies (UN agencies)

Autonomous organizations working with the United Nations and each other through the United Nations Economic and Social Council and Chief Executives Board (CEB). Some UN agencies are WHO, UNICEF, FAO, UNDP.

Vitamin A deficiency (VAD)

A lack of vitamin A in the body. VAD is common in many developing countries and is one of the main indicators of nutrition status in a population. It is often due to limited access to animal-source foods (containing retinol) or plant foods containing beta-carotene (e.g. carrot, pumpkin, green leafy vegetables). It particularly threatens women and young children. It can begin when infants do not receive adequate colostrum or breast milk. Chronic diarrhoea also leads to loss of vitamin A in young children. Night blindness is one of the first signs of VAD and in severe cases children become blind. Even mild VAD increases the risk of infections (particularly diarrhoea and measles). VAD is high among

pregnant women in developing countries and contributes to maternal mortality.

Wasting

Very low weight for height, generally due to a recent period of acute food deprivation, starvation or disease (Mwangome et al. 2012). (Prevalence of wasting: proportion of under-fives <-2 standard deviations from the median weight-for-height of the WHO reference population.) The main visible effect of wasting is thinness.

Western diseases

“Western diseases” include heart disease, Type 2 diabetes, hypertension (high blood pressure) and certain cancers. The term was coined in the 1960s by Denis Burkitt (Wikipedia 2014b) who argued that modern Western dietary habits, in particular, reduced fibre intake and a high consumption of energy, sugar, refined grains and fat, contributed to these diseases. The term has remained to describe the changing pattern of disease due to the nutrition transition.

WHO Complementary Feeding Training course

A course providing knowledge and skills on complementary feeding for health workers who work with caregivers of young children from 6 to 24 months of age. It is suitable for those in primary health care services in the community or attached to hospital health services (community health nurses, paediatric nurses, health care assistants, community workers, supervisors, counsellors and doctors). (WHO 2004)

WHO/UNICEF Community and young child feeding counselling package

A set of generic tools for programming and capacity development which aims to guide all aspects of community based **IYCF** counselling. It contains training tools to equip community workers, using an interactive and experiential adult learning approach, with relevant knowledge and skills on recommended breastfeeding and complementary feeding practices. To date, some 30 countries are at various stages of adapting the materials to the local context, building capacity and rolling out community based IYCF counseling and communication using the package.

http://www.unicef.org/nutrition/index_58362.html

Women’s land rights

Land is one the keys to building better lives and equality for poor rural women in the developing world. Yet in many places, women’s rights to land tenure are still not recognized or respected. Frequently, for example,

husbands control land that legally belongs to their wives, or women are blocked from access to land they inherit from relatives. Where a family's food is partly home grown or family income depends on cash crop sales, land ownership can strongly affect the quality of diet.

For further information about the importance of women's land rights in rural development and nutrition see:

- The Rural Development Institute (RDI), now known as LANDESA
<http://www.landesia.org/>
http://en.wikipedia.org/wiki/Rural_Development_Institute
- Land is Hope, the story of Landesa
<http://www.youtube.com/watch?v=5QohlC6gaMo>
- The Global Centre for Women's Land Rights, Brandon University, Canada
- Women feed the world about women's land rights
<http://www.youtube.com/watch?v=LldhkyvnkKg>
- Women and Agriculture SOFA Report 2010-2011 (FAO 2011a)
<http://www.fao.org/docrep/013/i2050e/i2050e.pdf>
- IFAD: Since 2008, the Women's Land Rights Project
http://www.ifad.org/english/land/women_land/index.htm

World Food Program (WFP)

Food assistance branch of the United Nations. Its five objectives are to:

- save lives and protect livelihoods in emergencies
- prepare for emergencies
- restore and rebuild lives after emergencies
- reduce chronic hunger and undernutrition everywhere
- strengthen the capacity of countries to reduce hunger.

School feeding is among WFP's many activities: it is the main provider of school meals in low-income countries. WFP is now aiming to promote nutrition education through school feeding; it is also encouraging **homegrown school feeding**, which offers good opportunities for nutrition education among schools, families and local farmers.

Zero Hunger Challenge

A UN initiative launched by UN Secretary-General Ban Ki-Moon at the Rio Summit in 2012. The five objectives of the campaign are:

1. 100% access to adequate food all year round
2. Zero stunted children in less than 2 years
3. All food systems sustainable
4. 100% increase in smallholder productivity and income
5. Zero loss or waste of food.

<http://www.un.org/en/zerohunger/#&panel1-1>



Zinc deficiency

An essential mineral that is naturally present in some foods, added to others, and available as a dietary supplement. Zinc has many roles in metabolism, supports normal growth and development during pregnancy, childhood and adolescence, and is required for a proper sense of taste and smell. A daily intake of zinc is required to maintain a steady state because the body has no specialized zinc storage system. Some foods rich in zinc are pumpkin seeds, groundnuts, liver, beef – and dark chocolate.

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NEAC NEEDS IN THE LITERATURE

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This document explores the needs expressed in the literature for NEAC and for more effective NEAC, in order to generate a generally approved process model or template of effective NEAC. The following document is therefore more functional than a pure literature review, aiming to pursue one main question (*What is needed?*) and come to a working conclusion.

N.B. “Need” is interpreted as a combination of demonstrated value and demonstrated lack.

1 THE NEED FOR NUTRITION IN THE DEVELOPMENT FRAMEWORK

Recognition of the need for NEAC and NEAC training depends first of all on recognizing the priority need for improved nutrition and dietary practices. The need is emphasized in the African Regional Strategy 2005-2015 (African Union), which outlines the deteriorating state of nutrition in the region and the need to “re-emphasize nutrition as a basic input in poverty alleviation strategies and the achievement of the MDGs”. DfID and the EC have recognized that chronic malnutrition must be a priority (Sumner et al. 2007). The World Bank sees nutrition as “absolute ground zero for any serious discussion of economic and human development” and spending on nutrition as highly cost-effective (World Bank 2009). At the same time the general complaint has been that nutrition is conspicuous by its absence in the framework of development aid. Nutrition is the “forgotten MDG” – “often unrecognized, rarely acted upon and grossly underfunded” (World Bank 2009). It is “an afterthought in development priorities”, “one of the world’s most serious but least addressed health problems”, and “largely preventable” (SUN 2010). From 2004 to 2007 only about 1.7% of development and emergency food aid was dedicated specifically to improving nutrition (MSF 2009), while nutrition represents only 3% of the total given for health (SUN 2010). Of these dispensations of course only a fragment has been devoted to nutrition education and NEAC training.

Nutrition is also thinly represented in public health courses and qualifications offered internationally. In health promotion and health education many organizations (for example the Health Action Partnership HAPI) do not specifically mention nutrition or nutrition education; the London International Development Centre (LIDC) offers one course on nutrition but nothing on nutrition education, although there are three courses on health promotion. A highly reputed Masters degree in the education of health professionals (Maastricht University) does not touch on nutrition in its course outline, perhaps reflecting the content of the standard medical curriculum,¹ nor does its related publication, *Education for Health*, often deal with nutrition.

In developing countries the low profile of nutrition in government policy, strategy and national capacity has frequently been noted. In the words of “an authoritative respondent” quoted by

¹ Another general complaint is the low level or absence of nutrition in the training of health professionals and the resulting ignorance of doctors and nurses.

Ashworth and Ferguson (2009), “we are facing a capacity crisis in nutrition as nutrition programmes are not given priority at policy and implementation level.” Hence the supportive environment seen as essential by the Ottawa Charter for Health Promotion (1986) is lacking. In Malawi, for example, a capacity analysis identified an extensive need for nutrition activity and capacity building: implementation of national policy down to district level; nutrition interventions (including N surveillance); coordination of scattered initiatives; training at several levels; staffing, career structure and professional associations; and monitoring and evaluation (Malawi Dept. of Nutrition, HIV and AIDS 2009). Even where policy is in place there may not be implementation or interest, as our case studies have shown. These deficits are certainly maintained by lack of awareness at community level, where nutrition may not be directly seen as a concern and community action for nutrition is therefore lacking. Health services tend to see nutrition action from the curative point of view, i.e. identifying and treating malnutrition, rather than as preventive measures.

Important links across sectors and disciplines are seldom made (Smith 1997), as was noted by many of the respondents in our survey. Particularly relevant to rural economies is the fact that connections are not made between nutrition and agriculture. The need for a holistic approach to food security was clearly brought out in the FAO symposium “Food and nutrition security: food-based approaches for improving diets and raising levels of nutrition” (FAO 2010), where Prof. Pinstrup-Andersen deplored the separation of health, education and agriculture in “separate silos”.² The symposium also noted that these links were rarely made in policies, strategies and interventions and that food security was usually interpreted as improved food supply rather than improved diet. Examples were given of major multi-faceted projects where parallel agriculture and nutrition interventions had no point of active contact. “Agriculture doesn’t see the weakness – you have to make them see it, you have to insist,” said one participant, nutrition advisor to the Malawi government (Butao 2010).

2 THE NEED FOR NUTRITION EDUCATION AND COMMUNICATION

The value of nutrition education and communication (NEAC) in tackling nutrition issues is strongly supported by the literature, both as a complement to other nutrition, health and food security interventions, and independently, as a stand-alone alternative to other ways of improving nutrition.

2.1 THE NEED FOR NEAC IN FOOD SECURITY INTERVENTIONS

There is substantial evidence, including a number of authoritative reviews, that in agricultural and homestead food production behaviour-oriented nutrition education is critical to achieving nutritional outcomes (World Bank 2007; Ruel 2001; Laurie and Faber 2008, HKI 2004; Allan and Gillespie 2001); and conversely that increasing food production alone may have little or no effect on nutritional status. According to Helen Keller International (2004), “nutrition education is an

² See also <http://www.youtube.com/watch?v=wsno4HRFo8w>

essential component of successful homestead food production ... critical for improving the consumption of micronutrient-rich foods". It is a strategy that can be successfully carried out by agricultural extension workers (e.g. Andrien et al. 1998) and there has long been a movement to promote nutrition elements, and even communication training, in agriculture extension training (e.g. FAO 1995).

Nevertheless, the nutrition education element is often lacking in food security interventions, as also noted by the World Bank report (2007). For example, a major aid program dealing with agriculture in Africa outlines a multi-faceted approach to food security covering "crop diversification and improved techniques, farmer's associations, development and micro-credit, to support in conflict resolution, civic education, gender equality and basic adult literacy" – but not nutrition or nutrition education (Africare 2011).

2.2 THE NEED FOR NEAC IN DIRECT NUTRITION INTERVENTIONS

In direct nutrition interventions such as food supplementation and food fortification, nutrition education of some kind has frequently been found essential to raise awareness, ensure compliance or guide dietary choices (see e.g. Schüth et al. 2007; Cordero et al. 2008), especially of course when consumers have a choice (see e.g. Chen 2003). Thus nutrition education was selected as an essential success factor in successful community nutrition programs in Kenya, Tanzania and Uganda (Linkages 2002) and the need for supporting education is brought out repeatedly by the UNSCN Policy Paper 19 (Allen and Gillespie 2001). Correspondingly, many nutrition interventions, when evaluated, are shown to need more education input. For example, the assessment of the first large-scale implementation of the UNICEF Essential Nutrition Actions in India revealed that counselling on infant feeding needed strengthening (UNICEF 1993). The approach in the later model of ENA application (Guyon et al. 2009) is largely educational: a mix of training, communication, mass media and negotiation. The trend towards reinforcing the educational element is echoed in other recent reports. In the World Bank's proposed package for tackling nutrition needs (2009) "behaviour change intervention" is the largest component. Scherbaum et al. (2009) recommend nutrition education to accompany provision of emergency RUTFs. The World Food Programme has recognized the importance of "synergies between school meals and school health and nutrition education" (WFP 2009) - an important step since school meals are generally not "constructed" educationally within the school or community.

Challenges come from medical or emergency agendas which tend to regard the educational component as an optional extra or as too long-term for project accountability, and "put their faith in the tablets" (Crompton et al. 2003) or "prefer quick-fix solutions" (Ashworth and Ferguson 2009).

2.3 THE NEED FOR INDEPENDENT NUTRITION EDUCATION

There is considerable evidence too of the efficacy of stand-alone nutrition education in both reviews and individual project reports. Social marketing, which is purely educational, has had some remarkable results (Griffiths, 1994; Parlato et al. 1994). A review of articles (Yeong Pui Chuan 2011)

has shown that nutrition education alone can have a significant impact on complementary feeding practices. Parlato and Seidel (eds) (1998), describing large-scale projects in three African countries in the 1990s, demonstrate that “comprehensive long-term communicative approaches can produce significant improvements in a broad range of household-based nutrition behaviour, even in impoverished communities”. Projects across the world continue to substantiate such findings:

- In India Roy et al. (2007) found that “education without ... food supplements in an impoverished society can improve the dietary intake of young children and lead to better growth”, and sustain the impact.
- A later Indian study (Palwala et al. 2009) demonstrated significant effects on complementary feeding of intensive nutrition education for mothers in slums.
- In a Chinese nutrition education program (Guldan et al 2000) infants grew more and there were higher breastfeeding rates and lower anaemia rates.
- A program in Indonesia significantly improved the nutritional status of children through education alone (Webb and Block 2004).
- An intervention in Madagascar consisting of “training, interpersonal communication, community mobilization, and mass media” made huge improvements in breastfeeding and complementary feeding practices (Guyon et al. 2009).
- A clinical trial in Venezuela (Garcia-Casal et al. 2011) showed that stand-alone nutrition education could reduce anaemia.
- One UK website has claimed success in getting children to eat fruit and vegetables through a mix of educational activities (Food Dudes 2010).
- In Kyrgyzstan, consumption of iodised salt increased dramatically through education alone (Schüth et al. 2005).

Nutrition education embedded in normal health care routines has produced solid results. For Africa, Parlato and Seidel (1998) show that “the nutrition status of young children can improve without increase in household income and they can improve with low-cost communication activities added to child survival programmes”. In a review of dietary counselling programs Ashworth and Ferguson (2009) concluded that counselling caregivers about family foods can achieve good rates of weight gain in wasted children. The US EFNEP community programme, which has been regularly evaluated over decades, shows remarkable results in dietary and food-related practices among its participants – reading food labels, stretching food dollars further, following dietary recommendations more closely, handling food more safely - and a significant reduction in food insecurity (EFNEP website; Dollahite et al. 2003). Penny et al. (2005) describe a program which reduced stunting by two-thirds in a poor shanty town in Peru through making improvements in the nutrition service delivery in normal health services. NB Penny et al. also refer to other similar successful interventions.

There have been particular successes when nutrition education is accompanied by hands-on related activities (e.g. meal preparation, food gardening, feeding babies, growth monitoring), when it is a main element in a multi-component package (Knai et al. 2006) or when it involves highly participatory formative research (TIPs 2011; Dickins et al 1997). A well-known example in the North is the Finnish experience in reducing obesity and heart disease through government campaigns, cooperation from the food industry, control of food in schools and food labelling (Finnish National Public Health Institute).

There is however a tension between short- and long-term strategies. Nutrition learning has demonstrable long-term effects: for example, parents with nutrition knowledge are more likely to have well-nourished children (regardless of how much they spend on diet), and mothers' nutrition knowledge correlates well with children's height for age (Webb and Block 2004). Formal education of women results in improved infant nutrition (the odds of having a stunted child decrease 4-5% for every additional year of schooling (WFP/FAO, 2010)). However it is difficult in practice to adopt long-term effects as the goals of limited-duration projects. Thus the current focus on the 1000-day survival "window", explicitly formulated on an emergency basis (SUN 2010), tends to bypass general nutrition education and capacity building.

2.4 THE LACK OF NUTRITION EDUCATION IN DEVELOPING COUNTRIES

The paucity of nutrition education and communication activities worldwide was felt to be self-evident and was not researched in depth. For the countries of interest to our project it will emerge clearly from the country case studies. Some points made in the literature are mentioned below.

In aid projects there is a dearth of special funding (see Section 1), while in normative education, health and agriculture programs the lack in both quantity and quality is also evident. In schools, the main focus is on direct health and nutrition interventions rather than on education. For example in a survey of donor and agency support for school-based health and nutrition programs (Maier 2000) seven of the 45 programs mentioned nutrition education in passing, while only three described specific initiatives in nutrition education. School curriculum coverage of nutrition is thin. In 1998 a FAO survey of primary school nutrition education in 50 countries world wide revealed that nutrition education was generally not a mandatory school subject, that it was lacking from teacher training curricula and that the classroom methods were conventional and focused more on knowledge and awareness than on changing practices (Olivares et al. 1998). (Unfortunately it has not been possible to find a more recent survey.) In general public nutrition education, the emphasis in the development of FBDGs is more technical than educational: scanning the reports of the FAO/WHO technical consultation in Cairo (FAO/WHO 2004) and the European meeting in Budapest (FAO/EUFIC 200) reveals little discussion on educational use and implementation, very little consumer research, and promotion largely limited to one-way communication. In the health services, nutrition education is often ineffective. According to an on-the-ground survey of nutrition services by HKI (Hampshire et al. 2004), routine dietary counselling and screening for pregnant and post-partum women and for young children is often not done or poorly done in that most of the women do not understand the purpose of supplements and nearly half are unlikely to comply with unfamiliar advice on breastfeeding. Ashworth and Ferguson (2009) conclude from an extensive review of community dietary counselling prescriptions that "dietary recommendations were mostly vague and unlikely to be effective", that it was "often weak or absent and should be strengthened".

3 THE NEED FOR MORE EFFECTIVE NEAC: PREVAILING MODELS AND HOW THEY WORK

Given the demonstrable need for education which will improve dietary practices, the question is what kind of nutrition education has greatest impact. Three broad models or approaches are discussed in the literature:

- knowledge-based, aiming to achieve knowledge and understanding;
- behaviour-change approaches (mostly “front-end” focusing on appraisal, analysis, message formulation and delivery);
- behaviour-oriented health promotion (emphasizing participation and ownership, and an active learning process).

We have generally restricted our interest to food-based approaches (see e.g. Ashworth and Ferguson 2009), rather than those which aim to persuade people to incorporate food supplements in existing diets.

3.1 KNOWLEDGE-BASED APPROACHES

The most rudimentary knowledge-based approach in nutrition education is “information delivery”: that is, supplying nutrition information (for example in lectures, talks, text, posters, leaflets, labels or one-way advice) as the only or main element in an education program. It is associated with the language of transmission and reception rather than of construction, exploration and dialogue. Although information delivery remains a pervasive instructional strategy, its effectiveness even in establishing and maintaining knowledge is assumed by education theory to be low in comparison with more active, experiential and dialogic approaches (Dewey 1938; Vygotsky 1978; Schön 1987; Kolb 1984). Brieger (2006) of the Bloomberg School of Public Health, Johns Hopkins, summarising the principles of effective health education, notes that “for effective learning, giving information is not enough” and illustrates with findings about the low retention of learning from (for example) lectures or read texts in comparison with learning by practice; this is reinforced by Knowles (1973).³ Information delivery has also been objected to at a transactional level by the proponents of communication for social change (Figuroa et al. 2002) as one-way, asymmetrical and top-down rather than “convergent” and dialogic.

Rich, elaborated, active and interactive instructional approaches, supported by examples, visual aids, discussions, questioning etc., are more likely to enhance and maintain knowledge. However it has been recognized for some decades that even these more engaging approaches will generally be ineffective in affecting dietary practices *as long as they aim mainly at knowledge*. Cerquiera (1991)

³ Palojoki (1996) shows a weak relationship between healthy food behaviour and factual knowledge, at least among Finnish homemakers.

noted that “sender-oriented” information dissemination improved knowledge and attitudes but not behaviour, and that “changing behaviour rather than disseminating information must be the clear intention of a programme if nutrition education is to be effective”. In a seminal review of school- and community-based nutrition education interventions, Contento et al. (1995) spell out the assumptions of what they named the KAB approach: that knowledge will lead to attitude change, which, in turn, will lead to behaviour change (that is, that knowledge is enough *in itself* to change dietary habits) and demonstrated, that while KAB could be successful in improving knowledge and attitudes it generally failed to push them into action. This finding is fully endorsed by education theory: it exemplifies Bandura’s “learning without performance” (Bandura 1977) and is in line with the established distinction between declarative and procedural learning (Anderson 1982).

Nevertheless, knowledge-based approaches remain the default mode of nutrition education: “transmission and persuasive models still continue to dominate the design of strategic communication, at least in the field of health” (Figuroa et al. 2002). Many projects remain within the knowledge loop, first aiming at knowledge and understanding and then evaluating (if evaluation is done) entirely or mainly on the basis of knowledge and understanding gained (e.g. Shah 2010; Walsh 2002).

3.2 BEHAVIOUR CHANGE APPROACHES

Conversely, “nutrition education ... is a significant factor in improving dietary practices when behavioural change is set as the goal and the educational strategies employed are designed with that as a purpose” Contento et al. (1995). Stimulated by this finding, behaviour change approaches have reacted against ineffective knowledge-based strategies. They aim to develop practical behavioural messages about what to do and to spread them wide, concentrating more on the “motivational stage” of behaviour change than on the “action stage” (Contento 2008). The movement draws on a range of educational theories (for summaries see Contento 2007; Boyle and Holben 2006; Stuart and Achterberg 1997; Rodrigo and Aranceta 2001). It has been extensively operationalised and evaluated, and hence is in a constant state of principled evolution (early and later examples of lessons being learnt in this way are Parlato and Seidel (1998) and the I-Life Malawi evaluation (Robins and Best 2008)).

Social marketing

First in fashion for nutrition education in the 80’s is social marketing “the application of marketing principles to the design and management of social programs” (Griffiths 1994). It aims to “sell” a practice by getting the right message to the right people through the right medium. As with commercial advertising, it concentrates on the supply side. Griffiths (1994), Favin and Griffiths (1999) and Parlato et al. (1994) set out some social marketing principles and practices for nutrition education: carrying out formative audience research (situation analysis, segmentation of audience); aiming at small manageable (and measurable) behavioural objectives; crafting comprehensible, convincing and consistent messages; selecting appropriate media; and evaluating the reach of the message.

Social marketing has achieved some striking results in nutrition (see Griffiths 1994) but its limitations for health promotion have been noted from the start (e.g. Birkinshaw 1988): for example, the isolated targets and individual orientation, the contextual obstacles to change. It has also been challenged on the grounds that it needs a stronger sustainability framework to maintain new behaviours, which “are fragile and can rapidly disappear” (Parlato et al. 1994) and which rely on “a complex mix of motivation, ability to continue performing and ability to perceive rewards” (WHO 2007). It has been said that even in the US public health programs cannot afford social marketing because it is costly, requires considerable expensive expertise and needs sustained promotional effort (Ling, quoted by Minnesota Dept of Health 2001). Moreover, if not mediated by interactive web access or other social contact, communication in social marketing campaigns remains very one-way or (if government-led) top-down, and in this sense it remains an elaboration of the information delivery paradigm. Current social marketing initiatives (e.g. Alive and Thrive) tend to be included in a package of interventions with more interactive and community elements.

Behaviour change communication (BCC)

BCC has the same emphasis as social marketing on formative audience research, message development and mutually reinforcing media channels. Some documents which set out behaviour change principles and practices are Parlato and Seidel 1998, Linkages 2003 and USAID 2010. BCC has a strong and explicit theoretical base in theories of the internal and external motivations, pressures and inducements that lead individuals to decide to change their health behaviour, for example the stages of change model (Prochaska and Di Clemente 1986); the Health Belief Model (Janz et al. 2002); and the theory of planned behaviour/reasoned action (Fishbein 2000): all act as useful checklists for exploring motivation and deciding how to target educational efforts. It has however been objected (Figueroa et al. 2002) that they are best at explaining the motivation for individual actions, whereas much nutrition action is intrinsically social.

BCC has increasingly opened up the social and participatory dimensions, shifting from individual to social behaviour change with a greater emphasis on two-way communication. The current AED definition of BCC (AED 2010) advocates “interpersonal channels” as well as mass media approaches. USAID (2010), recognizing the range of social and contextual influences on behaviour, adopts the title “*social and behavioural change interventions*”, and recommends community participation, consultation and mobilization. The developing model (e.g. Linkages 2003) incorporates many features of skills learning and social learning such as demonstrations, role-modelling, discussing obstacles and how to overcome them, experimentation, group feedback, mutual support over a period, personal monitoring of progress. Some operational examples are “negotiated change through group counselling sessions” (Linkages 2003) and the Care Group approach (e.g. Food for the Hungry Annual Results Report 2009). More radically, it has been proposed that “social cohesion ... is now recognized to be essential for maintaining a healthy population” and that changes in nutrition status can be brought about by social marketing with participatory learning and action to develop social cohesion (Havemann and Pridmore 2005).

3.3 HEALTH PROMOTION

Health promotion, while it does not represent a distinct procedural school like BCC, has provided some defining principles for a parallel evolution in nutrition education which centres on how people live and what they decide to do, and hence has given more attention to the environment of behaviour change and the “action stage” of the process (Contento 2008).

The Ottawa Charter (1986) on health promotion places nutrition education in a context of public action. It identifies five independent (but mutually supportive) domains for action:

- build healthy public policy
- create supportive environments
- strengthen community action
- develop personal skills (education)
- reorient health services (e.g. from curative to preventive).

In this way nutrition education is not dealt with in isolation or as a purely individual matter, but as one dependent on and influenced by social policies and institutional actions. Smith (1997) gives the example of rapid urbanisation which “turns knowledgeable food producers into naive food consumers”. In such a case a situation analysis might show a great need for various kinds of nutrition education but also for improving markets or setting up food programs: in this way nutrition education works as part of an effective package.

As regards approach, the Ottawa Charter defines health promotion as “the process of enabling people to increase control over and to improve their health” (WHO 1986). Self-determination and participation are therefore central: “health promotion is not something that is done on or to people; it is done by, with and for people” (WHO 1997a); it “builds the capacity of individuals and communities to make their own good decisions relating to their nutrition” (Kent 2010). This stance is in tune with the learner-centred approach in education, which has grown from theories of constructivism and experiential learning (Dewey 1938; Vygotsky 1978; Schön 1987; Kolb 1984) and from direct experience of the limitations of teacher-centred approaches, and which has been widely endorsed for health education (e.g. Dixey et al. 1999). In nutrition education it explains the interest in life skills (e.g. UNICEF, lifeskills) and the participatory approaches that have been constantly recommended over the years (e.g. Stuart and Achtenberg 1998; Anderson 1988; Smith 1997 (citing three other recommendations); Figueroa et al. 2002).

Skills acquisition has been proposed as the underlying learning process in health and nutrition promotion (WHO 2003; Hawes 2003; SNE et al. 1995; UNICEF skills site) in the recognition that most health learning involves building routines, practical skills, cognitive skills and life skills. The literature on skills acquisition (e.g. Anderson 1982; Bandura 1997; Dreyfus and Dreyfus 1980) emphasizes activities which develop procedural knowledge: observing and imitating practices, examples and models; repeated practice, feedback, reinforcement and re-trial; reflection on performance; real/realistic context; incremental learning; passing on learning.

Under the influence of social learning theory (Bandura 1977), this powerful but narrow process has expanded to take more account of the actors themselves and the social and physical contexts that

affect them: their experience, existing knowledge and knowhow; their outlooks, concerns and motivations; the other players in the social scene, the effects of social interaction and social norms, and contextual constraints. In schools, for example, many nutrition education initiatives advise socialising activities and embedding them in context (Health-Promoting Schools (WHO 1997b), the FRESH initiative (UNESCO 2000a), the FAO manual for nutrition education curriculum development (FAO 2006b)). In the context of training health workers, the approach has been well summarised by Brieger et al. (2006). Some successful interventions have built on particular aspects of the social learning model: for example, positive deviance approaches and the Hearth Model (Sternin et al. 1998) emphasize several kinds of modelling; the Child-to-Child movement works with peer teaching; barrier analysis and Trials of Improved Practices (Dickins et al., 1997; TIPS) systematize the participatory exploration of contextual constraints.

General long-term nutrition education

With its holistic emphasis on the life-cycle and wider society, health promotion also covers activities which aim to build long-term nutrition understanding among the general public, for example, the development of food-based dietary guidelines (FAO FBDGs), nutrition education in schools (e.g. FAO 2006), colleges and extension training (see e.g. Colecraft et al. 2008), general adult education (e.g. EFNEP) and “nutrition literacy” (FAO 2006). Such initiatives suffer from a number of handicaps. Institutionalised social programs find it hard to attract either public or donor funding. Moreover, although (as mentioned above) there is evidence that parents’ nutrition knowledge and general education have an effect on the health of their children, the difficulty of attributing specific outcomes to such programs is a particular disadvantage in an evidence-based development atmosphere (see e.g. the Lancet articles on nutrition priorities (e.g. Cesar 2009)). Public nutrition education is also in danger of defaulting to information delivery approaches, as pointed out above with respect to dietary guidelines. Nevertheless, it may be that these wider educational approaches are neglected to society’s loss.

4 GENERIC FEATURES AND CORE PROCESSES OF EFFECTIVE NEAC

The main behaviour-oriented contemporary movements in nutrition education have different emphases and origins but strong clusters of common interest: tackling priority needs; focusing on practices; audience research; content and activities socialised and embedded in situation and context. They are also showing signs of convergent interests in community involvement, participation and follow-through. There have been several attempts to gather best practices and integrate workable processes.

4.1 PROCESS MODEL

One simple attempt at integrating the model can be found in Temple and Steyn (forthcoming). Its main advantage is its flexibility, allowing for participatory and controlled activities, formal and informal. The central process is presented as the actions of the learner/ participant, not of the educator, so that it can act as a checklist of learning actions. Otherwise the model does not indicate who does what or when: the areas of new learning in knowledge, attitudes and life skills could be identified by anyone at any point in the learning process; steps taken to tackle them could be integrated at any point. "Influences" on the core process are the broad areas about which questions need to be asked, whether as self-questions of groups or individuals or in formal research. The diagram touches on the learning design process (analysing needs, monitoring, evaluation) but does not develop it systematically.

The diagram can act as a checklist of points to be covered in assessing nutrition education activities: the background which has been explored, the curriculum and learning objectives identified, and the learning process in place.

NEW LEARNING	BEHAVIOUR CHANGE PROCESS	INFLUENCES
DEVELOP ESSENTIAL NEW KNOWLEDGE/ UNDERSTANDING/ PRACTICES	1 Explore existing practices and beliefs (own and others') and express own concerns	INFLUENCE OF PHYSICAL AND ECONOMIC CIRCUMSTANCES
	2 See models (what others do)	
	3 Take on new learning/understanding.	
DEVELOP & CHANGE ATTITUDES/VALUES/ MOTIVATIONS	4 Take on new hands-on experience	INFLUENCE OF NORMS AND SOCIAL CONTEXT
	5 Perceive shortfall & causes (see what needs to be done and why)	
	6 Develop intent (decide to do something)	
EXERCISE & DEVELOP LIFE SKILLS	7 Explore ways, means & obstacles (how to go about it, plans, problems)	INTERACTIONS WITH OTHER PARTICIPANTS, PEERS, MENTORS & OTHER PLAYERS
	8 Practise and monitor (try-outs, mutual support)	
	9 Get feedback on performance (encouragement, discussion, reflection)	
	10 Take real-life action (+ relapses, re-starts) Evaluate, discuss, reflect	
	11 Pass it on (tell the world)	POLICY & INSTITUTIONAL ENVIRONMENT
	12 Maintain it	

4.2 BEST PRACTICES AND STRATEGIES

Some reviews of nutrition education activities (e.g. Smith 1997; Knai et al.2006; Parlato et al. 1994) have compiled lists of empirical “meta-strategies” for success, which can also be used as checklists for informal assessment of interventions. These are summarised below, together with recommendations from Contento et al. 1995, DfID 2008; Hosmer et al. 1997; Pratt and Pratt 2003; Rodrigo and Aranceta 2001; Ashworth and Ferguson 2009 and World Bank 2005. Most of the strategies are embodied in the models described above, but some which have attracted more empirical weight are the power of hands-on experience; the value of trial and error; the usefulness

of various kinds of modelling, including fictional stories and cases; the need for practice and learning by experience; the importance of maintaining activities over a long period; and the need for dialogue and discussion.

Design:

Strategies	Multi-component, multi-strategy interventions
Objectives	Focus on specific behaviours, simple and practical
ToT	Train educators
Duration	Maintain activities over a long period; a long follow-up is essential to sustain changes

Overall:

Needs analysis	Involve participants in their own needs analysis
KAPP	Explore existing knowledge, attitudes, practices and perceptions.
Determinants	Understand the factors affecting practices.
Obstacles	Identify barriers to good nutrition.
Whole person	Look at all aspects of life and lifestyle which affect choices
Players	Consult all the core players (e.g. whole family, community groups etc.) and actively involve those directly concerned
Community	Promote participation and action in communities and families Use social networks Initiate and maintain word-of-mouth communication locally.
Start where people are	Integrate new learning with existing practices and build up incrementally.
Aim for behaviour	Carry through a behaviour learning process
Participation	Put the process in the hands of the actors Build in personalized self-monitoring and self-evaluation Use peer leaders
Interest and attention	Ensure that someone is interested in what participants do

Activities:

Relevance and realism	Go for reality or a reality feel (illustrations, anecdotes, try-outs, stories)
Show as well as tell	Do practical demonstrations, use models, discuss cases, use visuals
Modalities	Use several modalities (e.g. hearing, writing, talking)
Hands-on	Increase hands-on experience (e.g. cooking, shopping, gardening)
Communication	Discuss all ideas and actions
Information	Give accurate information about what and how
Motivation & ownership	Generate status, pride, social recognition and enjoyment Promote choice, independence, personal control and problem-solving
Technologies	Use available economical technologies (e.g. mobile phone photos, SMS)
Practice	Experiment with and practise target activities, feedback and re-trials Follow practical demonstrations with practice sessions
Role-models	Use local role-models with high social value

Sustainability:

Costs	Keep costs down.
Exit strategy	For projects, plan the exit strategy from the beginning.
Maintenance	Make maintenance and maintenance planning part of the program
Passing it on	Create breeder effects: e.g. actors act as messengers, start new groups, teach peers
Sustainability	Work for sustainability of learning programs as well as of learning

4.3 THE NEED FOR AN APPROPRIATE DESIGN PROCESS FOR NUTRITION EDUCATION INTERVENTIONS

In NEAC's state of evolution, it is important both to target interventions and to assess outcomes effectively, hence the need regularly expressed in the literature for a comprehensive logical framework in the design process, covering needs, aims, objectives (and baseline data); methodology, implementation and monitoring; and evaluation. Rogers and Schlossman (1997) indicate that the effectiveness of NE interventions is limited by inadequate situation analysis, lack of impact evaluation and failure to incorporate feedback into the intervention design.

What's lacking and what's needed in formative research?

Situation and needs analysis is particularly emphasized in behaviour-oriented approaches which respond to causes, conditions and motivations. A basic procedure is outlined in FAO 2002. We found no general estimates of absent or weak formative research: the lacks in this area are mainly indicated by the amount of advice available on the growing battery of enquiries required to make the intervention fit the recipient and the circumstances. The main issues to be tackled must first be identified (Calderon 2001), exploring their causes and establishing a baseline for evaluation. Here the danger of slipping into the "knowledge loop" rather than dealing directly with practices has already been mentioned. Some established approaches to knowing the target population and their practices are KAP studies of knowledge, attitudes, perceptions and practices (e.g. Mahr et al. 2004; UNICEF 2010), sometimes enlarged to KAPP to include "perceptions"; target population descriptions which may look at culture, values, aspirations, problems, role-models and persons of respect, interests, social activities and groups; even task analysis, which is generally applied to work-related learning, can be called on to look at relevant routines and practices (who is involved, what is done and why, how it is done, how it is perceived, obstacles to change) (see NEAC project website MODELS OF FORMATIVE RESEARCH).

The social context must be explored (Calderon 2001, WHO 2001), including relevant groups (secondary and tertiary targets) and their communications and influence ("patterns of access and control"), communication resources, information sources, preferred community activities. Parlato and Seidel (1998) list other contextual factors affecting dietary practices such as market conditions, economic constraints, cultural preferences, intra-household food distribution practices, beliefs about food appropriacy, traditional cooking practices and tastes. HKI 2004 points out the span of practices affecting nutrition (e.g. home gardening, cooking methods, food preservation, small animal husbandry), suggesting a food-cycle approach. Other front-end analyses specifically explore constraints and opportunities such as the cost of adequate diets (Chastre et al. 2007), while barrier analysis (see Barrier Analysis website) looks systematically at what may impede targeted practices. On the other hand, positive deviance approaches (e.g. the Hearth Model) and TIPS (Dickins et al. 1997) identify and promote feasible solutions already in practice or readily available in communities (Sternin et al. 1998; Allen and Gillespie 2001; Ashworth and Ferguson (2009). Also stressed by social marketing and BCC is the segmentation of the target audience, the crafting of the message and the

selection of appropriate media. For example the Essential Nutrition Actions (UNICEF 1993) are the basis for many nutrition education programs.

The practical and technical problems with formative research are making sure that it is done, done well and used effectively. The educational questions are about who should do it and when. The movement for participatory research is growing, linking front-end enquiries with summative evaluation and PLA (participatory learning and action). There are manuals setting out the process, especially in TIPS but also more generally (Dickin and Griffiths 1997; AED/Linkages India 2003; Anyaegbunam et al. 2004; Altarum Institute 2009) and a growing number of successful participatory projects (e.g. Havemann and Pridmore 2005; Green 2005). These also allow for recursive enquiries which are not crammed upfront but deal with new questions as they arise; for parallel enquiries in which formal research is matched with informal discussion; and for building a “research outlook” in participants. This development is in line with the principles of health promotion and educationally is an extension of the concept of action research (see Action Research, wikipedia), with its emphasis on enhancing the awareness, learning and satisfaction of the participants.

What’s lacking and needed in evaluation

Since the efficacy of nutrition education is not guaranteed, some form of effective evaluation is essential to light the way to improvement. However, the lack of systematic evaluation is noted by many: for example, Barbara Smith (1997) found patchy evaluations in nine case studies of nutrition education interventions; a survey of counselling techniques established that mothers’ understanding of advice given was not checked by health counsellors (Hampshire et al. 2004); while Allen and Gillespie’s concluded in 2001 that most nutrition and nutrition education interventions were not evaluated at all. Possibly the situation has now improved.

Many shortcomings in actual evaluations are identified. There may be limitations in the process, level of assessment, choice of evaluation instrument or integration of objectives, practice and assessment. A group of health service workers (Joyne 2010) pointed out that evaluation is often added as an afterthought rather than integrated into the program from the beginning, and sometimes does not feed back into decisions about future interventions. Of the four popular levels of summative evaluation in functional education (Kirkpatrick 1975) many nutrition education interventions look only at consumer satisfaction or learning and not at behavioural changes or long-term impact on health. An exception is the excellent all-round evaluation of the Irish Cook it! program (Health Promotion Agency 2009) which assessed impact, process and the perceptions of both learners and tutors. A frequent lapse in validity is to assume that changes in practice can be assessed purely by tests of declarative knowledge or attitude. Another mismatch is that objectives, implementation and evaluation are not aligned (Biggs 1999): for example, *de facto* targets (what is actually practised and prioritised) such as intersectoral collaboration or collecting professional experiences are not expressed as objectives or assessed. Alternatively, the objectives may be valid (e.g. *design and carry out a nutrition education intervention*) but may not be realisable within the intervention framework and therefore cannot be assessed.

Advice on carrying out evaluations is plentiful, although several different outlooks are in evidence. The classic scientific approach which aims to weigh measurable outcomes objectively and avoid data

contamination is exemplified by Oshaug (1997), who also notes its high cost and the expertise required. An example is Dollahite et al.'s (2003) solid evaluation of EFNEP's contribution to food security. Hersey and Daugherty's 1999 manual spells out the limitations of social marketing evaluations, which often lack the resources to look at long-term health outcomes or biomedical indicators and focus instead on strategy and reach. The FNS evaluation guidelines for nutrition education (2005) stress general principles, purposes and practicality (e.g. fair treatment of the participants, sharing the results). General participatory evaluation processes are laid out by Aibel 1999, Stephens and Putnam 1988, Estrella and Gaventá 1988 and Mefalopulos and Kamlongera 2004 (we have not found guidelines specifically for participatory evaluation of nutrition education). A range of evaluation measures was reviewed by Contento et al. 2002.

All these evaluation procedures are long; some are complex and technical and may be beyond the means of many programs: they tend to be one-off, externally funded or at least led by outsiders. It is to be hoped that it is possible to develop an "evaluation outlook", with a few easily handled commonsense procedures which would enable participants to assure themselves that they have made progress towards their aims.

Further criteria for assessing NEAC initiatives

Our criteria do not therefore depend upon the scientific credentials or the comprehensiveness of the learning design, but are interested in

- the presence and focus of the formative research
- the presence/strength/quality of an evaluation framework (M&E, baseline)
- the level of participation in and ownership of these activities.

(Revised May 2012)

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NUTRITION EDUCATION TRAINING NEEDS IN THE LITERATURE

WHAT DOES THE LITERATURE HAVE TO SAY ABOUT PROFESSIONAL TRAINING IN NUTRITION EDUCATION AND COMMUNICATION?

A major need for more and better nutrition education indicates a major need for more and better nutrition educators. This need is clearly voiced in the project's case studies and is not demonstrated here. Instead we concentrate on what kind of nutrition education training is needed to ensure that nutrition education will be effective and sustainable, and attempt to produce an outline template of these requirements.

1 WHAT ARE THE FEATURES OF GOOD NUTRITION EDUCATION TRAINING?

This review calls on both theoretical and practical observations in the literature to develop some yardsticks by which communities, institutions and projects can assess the likely or actual success of professional NUTRITION EDUCATION training. Since much of the literature focuses on in-service training for professional managers and has a western orientation, we have tried to pull out broad general principles which will apply equally to undergraduate and extension courses and to developing country situations.

The criteria developed here do not conform to a single ideology (e.g. behaviour change communication (BCC), problem-based learning (PBL), mastery learning). They aim to construct a loose-fit garment for the professional preparation of nutrition educators in developing countries, drawing eclectically on approaches, good practices and recommendations from a variety of sources.

1.1 FRAMEWORK/CONTEXT OF NUTRITION EDUCATION

Rogers and Schlossman (1997) locate training in the field of "public nutrition" in which nutrition "is not a discipline to be studied but a problem to be solved". They see it as falling under the umbrella of the social sciences, with professional capacity as its main aim and associated in curricula with management, economics, planning and programming, field practice and application. Nutrition education training is therefore in line with other learning where the outcome is professional practice, such as social work, medicine, counselling, nursing, agriculture and education, and most continuing professional development (CPD) and work-related learning. This applied orientation,

“learning to do”, seems unavoidable, and must influence our ideas about the proper content and features of a nutrition education training course.

1.2 RELEVANT EDUCATIONAL THEORIES/PARADIGMS

This study calls on theory, research and experience in a number of fields. Since there are few systematic reviews of best practices in nutrition education training itself, we also draw on related fields, e.g. counselling courses, teacher education, training of health professionals, university education and CPD in general.

Education theory relevant to developing professional nutrition education capacity includes many areas which also apply to nutrition education: for example, behaviour change theory, skills learning, participatory approaches, the experiential learning cycle, and some tenets of both behaviourism and constructivism. Bearing in mind that our potential audiences are both pre-service and in-service, with a range of motivations, experience and study habits, we may also draw on:

- ideas of learning associated with workplace capacity such as
 - o situated learning
 - o task-based learning
 - o work-related learning
 - o competency-based learning and mastery learning
 - o problem-based learning;
- ideas of learning associated with related fields and disciplines, for example
 - o medical education
 - o counselling
 - o teacher education
- ideas associated with improving academic learning, e.g.
 - o study skills and preferences
 - o the taxonomy of cognitive objectives
 - o learner-centredness;
- general principles proposed for course development and implementation, e.g.
 - o participatory approaches
 - o instructional design.

“Loop input”

Loop input, a term coined for teacher education (Woodward 1988), entails mirroring the *advice* given in training sessions in the actual *practice* of those sessions. For example, trainers who advocate hands-on experience should not only talk about, but also provide hands-on experience: i.e. practise what they preach. In this way learning is achieved by example and more economically than by telling. Educators are often unaware of the irony of (for example) advocating active experiential participatory approaches exclusively through formal lectures delivered from a podium, or recommending SMART objectives without adopting them in their own activities.

Loop input is particularly applicable to nutrition education training, which deals with the behaviour needed to change others' behaviour. "Doing nutrition education" is a practice just as good diet, cooking and breastfeeding are practices and just as much governed by habit, acquired perceptions and previous experience. Many of the principles of nutrition education therefore apply to nutrition education training: for example, not relying on knowledge alone; using models; ensuring practice and feedback; calling on social support.

2 PRESCRIPTIONS AND PROSCRIPTIONS FOR NUTRITION EDUCATION TRAINING

2.1 WHAT IS THE PROCESS OF COURSE DESIGN? WHAT ELEMENTS / STAGES ARE NECESSARY?

The course design process

Rogers and Schlossman (1997) indicate that the effectiveness of nutrition education interventions is limited by inadequate situation analysis, lack of impact evaluation and failure to incorporate feedback into the intervention design – all attributable to poor nutrition education training. The proponents of instructional design lay out a process for developing courses (see for example Instructional Design website) leading from situation analysis through the identification of aims and objectives, selection of baseline data and indicators, choice of strategies/methods, design and development, implementation, monitoring and course evaluation. Popular acronyms for this logical framework are ADDIE (analysis, design, development, implementation, evaluation) (Instructional Design 2010) and NAOMIE (needs, aims, objectives, method, implementation, evaluation) and the first two As of the Triple A process (Assessment, Analysis and Action) (UNICEF 1990). Other important process elements are course revision (in line with feedback) and devising student assessments (see e.g. COL 2005). Most frequently stressed are the need for formative assessment (including profiling and needs analysis) and evaluation. Linkages (2010), for example, includes a training module on formative research for infant feeding programmes and there are many manuals on the conduct of impact evaluations. For open and distance learning (ODL), where students are expected to work independently and are in greater need of support, needs assessment is one of the cardinal principles. This was emphasized by Dr Hilary Perraton at a LIDC workshop on open and distance-learning in low-income countries (Joynes 2010) and is also stressed by the People's University, a distance-learning organization for capacity building in public health.

Aligned objectives

A refinement of the logical framework is the proposal to align objectives, activities and assessment/evaluation so that the both the course activities and the final assessment map onto the proposed learning outcomes. This building block of mastery learning (e.g. Mager and Pipe 1983) has been renewed by Biggs (2003) for university education and has been adopted in some spheres of work-

related learning: for example the HACCP food safety training system (see HACCP website; Whitehead and Orris 1995) is based on precise matching of problem/objective, action and verification. This alignment improves course coherence, facilitates evaluation, and is in sympathy with the logical framework approach in development projects (e.g. AUSGuideline 3.3 2005), which calls for rational coherence/dependency between objectives, activities and the monitoring and evaluation (M&E) framework. Even more important, it ensures that some attempt is made to actually practise action objectives and to evaluate their performance on site.

Challenges

There are challenges to the use of the logical framework from many sources (traditional scholastic practices, education theory and intuition) and on various grounds. Different voices say, for example, that criteria for evaluating university courses comparatively are inoperable (Quaquarelli 2010; Grant 2010); that specifying learning objectives limits academic freedom (Guilbert 2001); that learning objectives are mechanistic and cannot represent the learning process (Eisner 1967); that objectives must develop in consultation with the learners; that the instructional design framework is a linear one-shot model rather than recursive or cyclical (Smith, 2002); and that precise “SMART” objectives cannot represent workplace functionality. Other objections are voiced in criticisms of the movement for outcomes-based education (Wikipedia 2011).

Nevertheless most agree on the value of this process framework as a planning tool and a means of ensuring relevant practice, or at least on its institutional value for accountability, assessment and face validity. While allowing that it should not be comprehensive or exclusive, we would expect to see some such course planning framework applied to developing a nutrition education training course, preferably in consultation with the learners.

2.2 WHAT SHOULD THE SITUATION ANALYSIS COVER?

A situation analysis for work-related training, according to the literature, may explore:

- a) national policy, commitment and resources
- b) national capacity needs
- c) institutional structures and capacity
- d) existing educational programmes and curricula and their strengths and weaknesses
- e) the main stakeholders and their interests
- f) the job market
- g) professional tasks and job profiles
- h) knowledge, attitudes, perceptions and practices (KAPP) in the target population
- i) general learner profiles (motivations, capacities interests etc.)

Some of these (a, c, d, e, f) help to establish the need for the course and its viability, while others (b, g, h, i) should visibly affect the content and approach of the course.

Capacity needs

Organizations dealing with capacity development in nutrition, for example the UN SCN Working Group on Capacity Development (UNSCN 2011) take it for granted that education and training provision should reflect national/regional capacity needs. Country capacity analyses invariably specify education and training need: for example, in-service training of government staff and other agencies, improving nutrition curricula and materials and extending training for health workers in rural areas (e.g. Malawi 2009). In this light, a nutrition education course curriculum should visibly take account of the capacity needs of the country or region, based on a systematic analysis, a stakeholder consultation, personal experience and intuition, or all three. This might mean, for example, recognizing the role of nutrition education in national food security, the need for nutrition education training in a variety of settings, the need for capacities in programme design and management, advocacy skills and so on.

Focus on the job: work demands and the problem syllabus

How far should the course focus on the job itself? The trend is towards making academic learning more relevant to the working environment. This is supported in the Bologna Process for higher education in Europe (see Bologna Process website; Haug and Tauch 2005). In the US a movement “to improve the relevance of public health education to practice” is spearheaded by the American Council of Linkages (2010), for example by ensuring that academic accreditation criteria include practice, that all courses have a practicum and that core competences are continuously revised and reviewed by professionals. The US Council for Education in Public Health proposes that curricula should be built upon competencies related to workplace performance (CEPH 2010) and not on “what academics believe graduates need to know”. The UN SCN working group on capacity development has indicated that universities in developing countries should play a key role in addressing local public health needs, through training among other things (UNSCN website). The Network: Community Partnerships for Health through Innovative Education, Service and Research (Guilbert 2001) promotes a “community-based, population-oriented approach” to the education of health professionals, based on problem-based learning (PBL) and continuing professional development (CPD). Two of our interviewees (Oluchi 2010 and Mbabazi 2010) endorsed the need for a greater public health emphasis in their Masters degrees, insisting that studies should be “applied in a fruitful way” and that internships were needed to make this possible.

The message is that a nutrition education training course should reveal full appreciation of the nature of the work on the ground, its settings, its clientele and its specific tasks, based on observation, experience and input from the field. The net should be cast wide to include jobs in all relevant sectors and organizations “to maximise convergence with other relevant programs” (Linkages 2002), and the demands of collaboration and integration. Many task demands will then contribute to the course curriculum. An analysis by Conklin (1995) identified 10 “areas of

competence”¹ which “should be the foundation of basic and continuing professional education for nutrition educators”, while the USDA, planning to move to a more participatory model of NEAC training, proposed a list of skills in which nutrition educators need to be trained (Deehy et al. 2010). While each country’s particular experience may be different, the *process* of exploring real-life working needs must be relevant everywhere. For example the DELPHI procedure has been used for developing expert consensus on core competences for South African community nursing (Strasser et al 2005).

The requisite competences may be elaborated in a task analysis as recommended generally for work-related learning (e.g. Kluge 2006) and specifically for nutrition education training in developing countries by Hosmer et al. (1997): “Making a complete list of tasks with information about what the worker will do, how the worker does it, to whom or to what, and why, will help determine what needs to be done in terms of specific skills, knowledge and attitudes required to perform the job”.

The critical word is “help”, since it is unlikely that a task analysis can ever capture the full complexity of a job (especially an educator’s job) or fully prescribe how it should be carried out (see objections in Strasser et al. 2005). Such frameworks are however on the path to redemption if they are generated by practitioners rather than imposed by course designers. In Cameroon, for example, health district managers have participated in their own course development by drawing up their own professional profiles and job descriptions and deriving their learning objectives from them (Le Vigouroux 2002). Both local and global experience need to be called on.

This analysis should also explore the particular difficulties of carrying out the job, for example in communications, attitudes, interpersonal relationships, circumstances, lack of institutional support. It requires the same attention to barriers as is recommended for defining behaviour change programmes at community level (e.g. Linkages 2003; Davis 2004) or for changing strategy at policy level (e.g. Sumner et al. 2007) or for assessing the operational potential of projects (e.g. Anyaegbunam et al. 2004).

Some barriers are unawareness of nutrition issues in the population, poor approaches in counselling etc. For example, some mothers receiving counselling on breastfeeding were incredulous about the practices recommended but did not reveal this to their counsellors (Hampshire et al. 2004); in another case a health worker complained: “Since I moved to this village, I have applied myself to teaching the people ... but very quickly, my initiative was interpreted in a nasty way and caused a psychological barrier to be formed that prevents people seeking treatment at the centre” (WHO 2008). Such accounts need to be heard: in both cases nutrition education training might respond by requiring more emphasis on listening, probing reactions, reducing prescriptiveness and following up on practice.

¹ Needs assessment, program planning and implementation, curriculum/program development, delivery of educational programs/instructional activities, development of partnerships/strategic alliances, community outreach/marketing, program evaluation, technical assistance, fiscal management, and program management/administration (Conklin 1995).

KAPP (knowledge, attitudes, practices and perceptions)

The existing mindset and practices of the participants, including personal and cultural blocks and obstacles, should also be taken into consideration. Behaviour change theory and practice, as described in the document *NEAC needs in the literature* in relation to nutrition education learning, apply equally to those who learn to do nutrition education, since they also have habits, preconceptions, expectations, attitudes and circumstances which should affect course content and approach: previous practices and experience; study habits, preferences and difficulties; long-term goals, interests and motivations. For example, in relation to an extension course in food security and nutrition in Malawi it was recommended that the formative research should look into participants’:

- understanding/perception of good diet, how dietary practices contribute to malnutrition
- current work practices such as existing approaches to education/ promotional activities
- understanding of nutrition education and how it works (Sherman 2011).

Existing practices may require a paradigm shift. It is a commonplace, for example, that most educators teach in the same way as they were taught themselves, which is often the “knowledge transmission” mode. By contrast nutrition education puts a special emphasis on behaviour change, which requires a different outlook, and will therefore need practice and support in implementation. Equally many undergraduate students (as well as their lecturers) prefer conventional academic courses based on theory to practical approaches (Kabahenda 2010; Biggs 1999). NEAC training course designers may choose to accommodate such preferences or to make a special effort to persuade students to adopt the new approach. In any case they must know where the learners are, so that they can start from this point. Courses should show signs of tailoring to the clientele and provision for making use of course members’ outside experience.

2.3 OBJECTIVES

Hosmer et al. (1997) propose that nutrition education training should adopt direct impact on nutrition status as a terminal objective, and it is sometimes possible to make this direct cause-and-effect connection. Intermediate learning objectives, however, should be clearly seen to include competent working practices. Just as with nutrition education itself, “public nutrition education training” objectives need to be closely related to the new behaviours targeted. Visibility can be raised, as CEPH (2010) suggests by describing learning aims as “action outcomes” or as “working competences”, with contributory actions, attitudes, knowledge and understanding described as “objectives”.²

The balance of stated learning objectives in nutrition education training should favour action and practice, and not be purely receptive or conceptual. A quick review of what calls itself “nutrition

²An important distinction is between course objectives, teacher objectives, topics and learning outcomes. There is an ongoing terminology battle between *objectives*, *outcomes*, *competencies* and *results*. For an overview of the “educational outcomes” movement, with arguments for and against, see http://en.wikipedia.org/wiki/Outcome-based_education. It can be argued that what is important is that course designer, educators and learners agree on what the learning objectives mean.

education training” reveals courses and manuals with no learning objectives; many with no action objectives; some dealing exclusively with nutrition science; and many which emphasize purely receptive understanding, such as *understand, state, appreciate, be aware of, list, describe*: formulations which may mask action aims, but often simply license traditional lectures and note-taking. Nutrition education training targets need to come closer to work-related-learning or BCC approaches, with clear professional actions in mind - for example:

- Assess your current work in terms of behaviour change communication
- Describe examples of advocacy, social mobilisation and behaviour change
- Organise what you already know
- Plan a strategy

(C-Change training modules 2010).

2.4 COURSE CONTENT/CURRICULUM

The literature reviewed produced few systematic reviews or evaluations of NEAC training course content, but it is possible to hear the voices of experience suggesting what it might mean for a nutrition education curriculum to attempt to reflect capacity needs.

What practitioners recommend

Rogers and Schlossman (1997), on the basis of an extensive survey of nutrition professionals, outlined a core curriculum for a “public nutrition” course (postgraduate and in-service). Although nutrition education represents only one thread in the curriculum, all the proposed elements appear to be relevant to “public nutrition education training” and can open this discussion on course content:

1. *Applied research skills*
2. *Communication skills*, including the ability to
 - translate technical data into lay language
 - do community education
 - carry out advocacy at administrative and policy levels
 - train others
 - work in a multidisciplinary/multisectoral team.
3. *Programme design, management and administration*, including planning, monitoring and evaluation, and the ability to write proposals. (The value of these skills was strongly endorsed by those who had had this kind of training.)
4. *Nutrition science* “Opinions varied widely on the question of what level of training in nutrition science is needed” but the majority agreed on “a basic but thorough understanding of human nutrition and the nutritional aspects of food”.
5. *Nutrition and food policies and programmes* (e.g. cases of success and failure, selecting interventions from a range of policy options) (This applies equally to NE policies and programmes.)
6. *Social science concepts*, particularly household economics and behavioural science.

7. *Fieldwork, internships and practicums* “There was 100% agreement that classroom learning must be complemented by field application”, even from those participants who had already worked in the field.
8. *Personal qualities* – e.g. commitment, entrepreneurial spirit.

These learning areas have been endorsed or expanded by others. Hosmer et al. (1997), focusing specifically on nutrition education training in developing countries, suggest that learners should also be acquainted with the principles of adult learning. They support the need for training in communication and “behaviourally oriented techniques” (points 2 and 6 above), and particularly emphasize the need for skills in project management (point 3), saying that nutrition educators must learn

“... all aspects of the training cycle: the needs assessment of the audience and the endeavour, developing clear, measurable goals and objectives consistent with the desired approach, strategies for implementation and development of the training curriculum and teaching methodologies, and delivering and evaluating the training.”

Programme and curriculum planning and development, management and fiscal management, delivery of educational programmes and instructional activities (points 2 and 3) emerge with high importance ratings in the 1995 US survey by Conklin, who asserts that the knowledge and skills required in these tasks “should be the foundation of basic and continuing professional education for nutrition educators”. Managing education interventions is given prominence in the Masters in Health Professions Education at Maastricht (see Maastricht website). The American Public Health Foundation’s Council on linkages between academia and public health practice (PHF 2010) has produced an outline of core competences for public health professionals, grouped into eight areas: analytical/assessment skills, policy development and program planning, communication, cultural competency, community practice, public health sciences, financial planning and management, leadership and systems thinking. Appraising and evaluating existing interventions, programmes and policies should probably be included as an ongoing thread.

The special need for training in nutrition education (point 2), and/or training community counsellors (point 2), is increasingly emphasized in recommendations, manuals and materials (e.g. Calderon 2001; Hampshire et al. 2004; Linkages 2003; World Bank 2005). The Network: Community partnerships for health (Guilbert 2001) insists on the value of ongoing field experience mediated with technical knowledge and academic discussion. A majority of working graduate nutritionists canvassed in Ethiopia (Abebe and Regassa 2006) had found that their work involved nutrition training or education, work in extension and community nutrition programmes or health care; their top demand for a proposed MA curriculum was “nutrition education and training”.

The SNE website (SNE 2010) also includes “public policy education” alongside professional development among its actions to support healthful eating. This need was particularly stressed by Dr Hilary Perraton in a presentation to the LIDC workshop on open and distance learning in health education in low-income countries (Joynes 2010). “Get political support and teach your learners how to pursue it”, he said. “We need to include politics in our health curriculum”. This must be even more true for nutrition and nutrition education, which are relatively neglected (see NEAC NEEDS IN

THE LITERATURE). Indeed a workshop in Malawi to develop a nutrition education and communication strategy emphasized that advocacy at all levels was essential (Malawi 2010).

Introducing participants to the professional community and the professional field

Through studying, practising and becoming qualified in nutrition education, students become eligible to join national and international communities of practice or at least discourse communities. Such communities foster and maintain professional expertise in knowledge, participation and practices, and are held to be more successful at this than (for example) refresher courses or further reading (Wenger et al. 2002). They are maintained and reinforced partly by their own products and activities and partly by “storytelling” between members, that is, exchange of experiences, cases and chat. The websites of the SNE and Cornell NutritionWorks exemplify their many goals and activities.

In countries where communications are poor, government is not very accessible and IT connectivity is still limited, professional training can help to enhance the entry to the professional community. At international level there are forums, associations, events, organizations, funding bodies and encyclopaedic sources of information. Participants need to become familiar with important reference sources and to learn what sources to trust. At the local level, this might mean hearing from expert local practitioners and “old hands”, learning about national associations, becoming familiar with local initiatives and getting access to national information sources. In the course itself, current controversies, issues and policies need to be introduced and debated. Rogers and Schlossman (1997) maintain that one of the three essentials for achieving training impact is “building in follow-up through networking, info exchange and dissemination, and periodic reunions of participants and faculty”.

The course should introduce members to their communities of practice, local and international, and help them to become familiar with their resources and activities. This professional socialization is often a course subtext but can be raised to the status of an explicit objective, for extension and maintenance of both academic and operational knowledge.

Knowledge of the field Even if course members are not able to participate actively in the community of practice, there are advantages to having an overview of the professional field of “nutrition education in development”. Knowledge of its history, changing concepts and models, achievements, successes and failures, controversies and issues, major actors and their agendas makes it easier to assess nutrition education initiatives, recognize particular rhetorics and agendas, choose models and approaches, write project proposals and so on. “Knowledge of the nutrition education field” should therefore be a conscious aim of a nutrition education training course. It can also be a fruitful source of course exercises in locating, describing and assessing past and present nutrition education activities.

On the local level a nutrition education training course must be a gateway to exploring course members’ own context and its challenges. Participants should be expected to find out about, share knowledge of, assess and plan for their own environment/country’s nutrition issues, policies, strategies and practices in nutrition education and NE training. All the main settings of nutrition

education should be illustrated (e.g. community counselling, schools, national campaigns, workplaces). Again, this is seldom an explicit course objective except in problem-based learning (PBL) and some BCC initiatives (see Guilbert 2001), but is implicit in the roles and responsibilities envisaged for nutrition educators (e.g. Conklin 1995; Rogers & Schlossman 1997). “Place matters” is one of two main tenets shared by nine “good schools” selected for their mastery of good practices in educating health professionals (Richards 2001). It helps if the course itself is seen as a community, with the possibility of exchanging experiences, perceptions and discoveries, collaborating in tasks and managing work, and building shared principles.

The role of knowledge in the NEAC training curriculum

The justifiable backlash against knowledge-driven approaches led by the behaviour change movement is reflected among other things in a spate of HOW-TO manuals such as the PRCA Handbook (Anyaegbunam et al. 2004), Linkages (2003), the CORE PD/Hearth Guide (Core 2007), the Practitioners Guide to NE (GTZ undated) which lay out action programmes step by step but do not make much reference to theory. Likewise in behaviour-oriented nutrition education there is a focus on action messages (e.g. in posters, radio jingles or on counselling cards) which do not necessarily explain or justify themselves. This raises a question of babies and bathwater: what is the proper role of knowledge in nutrition education training (as in nutrition education itself), and what knowledge?

Nutrition knowledge There remains a tendency to confuse learning about nutrition (subject study) with learning to do nutrition education (professional training). This is evident in the course curricula and in our own case study responses. In fact it is debatable how much nutrition knowledge is needed by those who have to do with nutrition education, especially in management roles. The majority of Rogers and Schlossman’s respondents agreed on “a basic but thorough understanding of human nutrition and the nutritional aspects of food”. Embedding nutrition education training courses in degrees which already have technical nutrition coverage resolves the problem, but where a nutrition education training course is open to other sectors, as is frequently recommended (e.g. Sumner et al. 2007), thought must be given to the essential nutrition knowledge required for entry. The FAO Planning Guide for curriculum development in nutrition education, for example (FAO 2006), has two preliminary modules on basic nutrition which course members are expected to work through if they have no grounding in nutrition science.

The FAO Guide also adopts “nutrition literacy”³ as a capacity goal for individuals and communities, which validates building a general practical understanding at all levels of society over the long term. It would certainly seem to be an ethical requirement that nutrition educators should as far as

³ Nutrition-literate people are those who can

- apply nutrition principles to their own situation and make informed and critical decisions about food and eating habits (e.g. choose healthy foods, resist social pressures, adapt to change in food supply and prices, evaluate advertising)
- influence others (e.g. siblings, peers and own children), explain diet and set an example
- see the implications of their food choices and eating habits for the environment
- protect and change the environment (FAO 2006.)

possible *understand* what they are being exhorted to *teach* – or manage - and pass on their understanding to others. Broad nutrition literacy should be fostered by the course.

2.5 METHODOLOGY AND STRATEGIES

“Success in nutrition interventions requires more than just the achievement of certain desirable outcomes... it requires that these outcomes be achieved by way of a good process” (Linkages 2002). It is a great strength of BCC approaches that they are explicit and detailed about their approaches, which are often invisible in published course outlines, reports of programs with nutrition education training elements, school curricula, policy statements and project documents.

Successful educational practices are complex and do not line up one-to-one with theory: each one (e.g. e-learning, video, case studies, simulations, group work, problem-based learning) has a range of forms and uses, supports and is supported by several schools and theories, and has its own empirical validity, history and fashions. Some of the trends which support appropriate learning strategies for NEAC training are given below.

Learner-centredness, learner engagement

In circles interested in the quality of university education (e.g. the Bologna Process) it is proposed to “change the focus from teaching to learning”. Biggs (2003) advocates a move away from the “deficit model” of university learning which depends on “transmission pedagogy” (often represented by lectures) and the commitment to “covering the curriculum”, towards an alternative model which encourages deeper understanding, a more active role for students and more interaction and socialisation of learning. This is in line with the principles of adult learning which see the learner as responsible, self-directed, motivated and critical (Knowles 1990). A complementary initiative is “problem-based learning”, strongly recommended for education for the health professions by the journal *Education for Health* (e.g. Guilbert 2001), which claims to result in more profound activation of understanding, long-term learning capacity and greater professional competence.

Current education philosophy is almost unanimously in favour of embracing learner activity, independence and engagement, direct experience, participation and ownership (to mention a few buzzwords), while “transmission pedagogy” has few declared apologists and the evidence against it continues to grow. For example, Powell (2003) demonstrates that lectures are not an effective means of generating understanding in undergraduate science degrees; in on-line learning, the “tell-and-test” approach which converts lectures and texts into learning objects, is strongly dispreferred by the COL handbook on instructional design for ODL (2005) as generating only superficial understanding; Knowles (1990) illustrates the retention levels generated by different levels of learner engagement ranging from lectures (very low) to teaching others (very high).

Nevertheless, one-way top-down information-delivery approaches remain the default standard in many courses for health professionals (see Guilbert 2001); there is some evidence that students as well as teachers and institutions often prefer not to leave their traditional comfort zones to engage deeply or embark on independent thinking and action (Guilbert 2001; Powell 2003); and near-violent

resistance has been reported to in some health professionals' education (Richards 2002). This "old war song" (Guilbert 2001) is a debate rediscovered (and renamed) in every generation. As Dewey said nearly a century ago: "That education is not an affair of telling and being told, but an active and constructive process is a principle almost as generally violated in practice as conceded in theory" (Dewey 1916). //

Strategies for shifting the paradigm vary. Training may engage learners directly or indirectly (through exercises, simulations etc.) in the recommended activities and processes (see *Practice and Action* below). Educators may make a major bid to break the mould: for example, Cornell University's course on food policy takes a case-study approach to food policy education for developing countries, involves a considerable suite of materials, induction for college lecturers, networking and extensive trialling (Lang 2008; Cornell University). Or they may dedicate time for building mutual understanding and training of trainers. Le Vigouroux (2002), describing an innovative PBL approach for district health managers in Cameroon, insists that a "latent period of mutual understanding between trainees and trainers" is an "absolute necessity", as is a "critical mass of competent and motivated trainers". Principle 5 of the Johns Hopkins powerpoint on learning principles for health workers is that "behaviour change requires time and patience" (Brieger 2006).

Signs of health in a nutrition education training course would be proper attention given to establishing and agreeing on the process, and some indication of a move towards involving learners in their own education, for example consultation, adaptation to learners' styles and needs, relevant activities, discussions/sharing and use of learners' input; at a deeper level, some negotiation of objectives, content, choice and self-direction. More radically, instruction may merge into action research, with largely autonomous structured projects, auto-analysis, self-developed curricula and self-evaluation.

Realism and reality

Work-related learning approaches (e.g. competency-based learning, experiential learning, task-based learning, PBL), put a premium on real-life experience and realism. A review of experiential learning in US higher education (Cantor 1995) concluded that it was most popular in education, health careers and social work, and that it produced more competent practitioners, improved graduates' career prospects, inspired more students to further study, and brought the university and the community together. Appreciation of real-life experience is echoed by the workers themselves. In food safety training, for example, people at work felt that training courses and qualifications were less effective than activities associated with the work itself – "being shown things, engaging in self-reflection and keeping one's eyes and ears open" (Felstead 2007). Trainee health professionals in community service insisted: "You have to walk the walk ... with real problems, not textbook scenarios. True situations cannot be encased in the classroom, and this is where the experiences are needed before practising on your own." "A course in community health is best taught in the community rather than in the classroom" (Oneha et al. 2001).

Training may engage with reality in a range of ways. Some frequently mentioned in the literature or deployed in training materials are:

- Step-by-step manuals which set out procedures for immediate implementation
- Illustrations and examples drawn from real life
- Authentic documents
- Field visits / Study tours
- Interventions by working experts and old hands
- Use of course members' own experience
- Real-life case studies
- Simulations and role-rehearsals of realistic situations and interactions
- Observation of real-life practices and conditions; interviews; surveys of the situation on the ground
- Practicum of some kind / hands-on experience with reflection and feedback
- Curriculum developed by learners around real field problems.

There is no intrinsic merit in any of these; what matters is their purpose and use. Such elements are sometimes included for cosmetic purposes or even (in the case of study tours) to mop up funds or reward staff. Nevertheless one of the hallmarks of a promising NEAC training course is a recognition of the value of real-life experience and a readiness to make good use of its educational potential.

Practice and action

From the model of skills learning (see NEAC NEEDS IN THE LITERATURE), essential elements in engaging learners are motivation, close observation of good practice, support from peers and plenty of opportunity to try things out and get and give feedback. Theoretical justification of practice for professional preparation can be found in all the historical phases of behavioural learning theory, not to mention the long history of working apprenticeships (educational theory of apprenticeship, Wikipedia). Bandura (1977) for example makes “performance enactment” the first of the modalities which influence behavioural learning, enabling participants to apply concepts in practice situations (e.g. case studies, simulations, application exercises) and to carry them over into real-life activity to the point of conviction and self-confidence. The need is generally unquestioned in related professional fields, which recognize that declarative and procedural knowledge are two different capacities (Anderson 1982), although it is not always recognized in practice. In teacher education, the practicum is a standard bridge between study and qualification; medical internships are the norm. In PBL, longitudinal community placements are taken as a criterion of effective programmes (Richards 2001). Many nursing courses are divided 50-50 between instruction and practice, some with on-the-job mentoring built in. Counselling courses typically include realistic classroom practice and a supervised placement.⁴ The US Council for Education in Public Health insists that all accredited degree programmes in public health must have a relevant “practice experience” (CEPH 2010). Rogers and Schlossman (1997) see fieldwork, internship or practicals as an essential part of “public nutrition” courses. For nutrition education itself, Contento (2008) identifies three components: the

⁴ A standard UK counselling course (RELATE) makes skilled counselling practice its main objective, with theoretical understanding contributory to it. Various kinds of practicum are built in. There are practice activities in the 9 days of instruction, and 40 hours of supervised clinical practice, running concurrently with instruction in theory. http://www.relateinstitute.ac.uk/courses/working_with_couples_cc.aspx.

motivational, the environmental, and “an action component, where the goal is to facilitate people’s ability to take action” and the emphasis is all on “how”. In nutrition education training, course time must be given to practice, and the costs of this need to be taken into account.

It would be unnecessary to insist on this point if it were not that, as emerges from our case studies, so much nutrition education training appears to lack practice and opportunities for application. The same is true in the field of food safety training, where the failure of information to transfer into practice has had to be repeatedly asserted and demonstrated in the face of prevailing training practices (Egan et al. 2007).

The strategy of unmediated “learning by doing” can of course also lead to bad practice, hence professional practice needs to be well managed. Variations in quality have to do with the objectives set, the time allowed, whether practice is integrated with the course or done as a separate internship, whether it is mentored, supervised or monitored and how well, and what outputs are expected.

Reflective practice (Schön 1987) is a popular concept in professional education (see reflective education website), especially in education, social work and the health professions and falls naturally into place in the practicum. The practitioner who learns well from experience is said to go through a cycle of experience, practice and experimentation, followed by conscious self-educational “reflection and abstract conceptualisation”, followed by further experience, practice and experimentation (Kolb 1984). (These stages have been labelled DO IT → WHAT? → SO WHAT? → NOW WHAT? → DO IT → etc.) (Infed 2010). It should be added that practical hands-on learning comes so naturally that it is often unnoticed by learners unless they take time out to consider how far they have come: reflection can therefore enhance motivation.

Reflective activity can be spontaneous, unstructured and open-ended (a natural learning response) or can be managed as an instructional strategy taking the form of, for example, group discussions, practical assignments, conversations with mentors, portfolios, work diaries or blogs. Many of these also have potential for assessment, hence course managers may find it difficult to avoid encouraging “right answers” rather than real ones. The value of reflective activity when handled in this way is hard to assess, nevertheless we would agree that as a minimum requirement time should be allowed in a nutrition education training course for talking non-judgmentally about direct experience.

Stories and models

“Vicarious learning”, after “performance enactment”, is the second major behaviour change modality proposed by Bandura (1977). Models and stories are two forms of vicarious learning which are potent in nutrition education and should also figure in nutrition education training.

Models can be both positive and negative. For nutrition educators, models may be peers, fictional figures or the actors in case studies, real-life mentors or experienced professionals who can show or describe what to do.

Stories are constructed by “reflection” from raw experience, hence they have action messages. They call on a distinct and powerful form of memory and are easier to remember than other forms of information. All case studies and purposeful activities are stories; PBL problems are stories; nutrition itself is a physiological and social story; the media are a constant source of stories about public nutrition.

Nutrition educators need to learn to use models and stories, so they should also learn through them. A course should expose nutrition educators to multiple models, help them to build a collection of good stories and to learn to use both models and stories.

Social and personal dimensions

There are few discussions of this aspect of nutrition education training, but some points can be extrapolated from other elements. The social learning dimension has already been mentioned, and the need to develop personal understanding through personal activity, exploration and application. Self-reference is also a powerful tool in relation to eating practices: one of the commonalities in health professional learning programmes rated “excellent” was the connection made between personal health issues and the health of the population (Richards 2001).

2.6 ASSESSMENT AND COURSE EVALUATION

Learning assessment and course evaluation are part of the design framework discussed in 2.1 above. Like other design elements they have to be budgeted from the start.

Learning assessment

Knowledge of being assessed is known to depress intrinsic motivation and performance (Ormrod 1990). However, course providers are often bound by statute to give grades and issue certification based on some form of formal assessment.

For work-related learning, Kirkpatrick (1994) proposes four levels of learning evaluation, in increasing order of validity:

- consumer satisfaction (what students thought about content, comfort, method etc.)
- learning (what knowledge, attitudes, skills were learnt)
- application (what changed in learners’ behaviour as a result)
- impact (what the long-term effects were).

Some assessments must be regarded as inadequate, including by the trainees. For example some courses ignore all except the first level; others concentrate on the second, often focusing on testing acquired knowledge. Neither goes very far towards establishing real-life learning outcomes.

The third and fourth levels attract more discussion, but particularly with regard to the training of health professionals, which is more standardised and institutionalised than NEAC training. Courses which aim at the ability to apply learning in the real world (the third level) generally require as an

end-assessment real or realistic projects such as planning interventions, conducting surveys, doing needs analyses, carrying out research. Performance in a practicum may be assessed through mentors' reports, records kept, quality of reflection, client satisfaction (see e.g. Carrasco et al. 2003). A schema for evaluation of community placement is set out in Kalishman 2002.

Real-world impact (the fourth level) is hard to assess except where the timeframe is adequate and learning is focused on one practice (e.g. counselling on breastfeeding practices over three years). It is also difficult in real-world contexts to achieve parity of conditions for individual performance: this kind of evaluation is more valid for group behaviour, for self-assessment (for example, trainees returning to work may be called on to complete a questionnaire a year later evaluating their use of learning) or for informal evaluations at periodic reunions of participants and faculty, in newsletters etc. (Rogers and Schlossman 1997). Nevertheless, trainees who have learnt to evaluate the success of their own training activities should be able to establish some direct evidence of their own competence.

General conclusions which can be drawn are that assessment should have some face validity, i.e. a convincing relationship to real-world outcomes, and that the assessment should relate to the objectives in a systematic way, with proxy indicators as close to their real-life referents as is comfortable and practicable (for example, the capacity to evaluate policy documents cannot legitimately be assessed with multiple-choice questions). Real-life activities can have built-in criteria for success, which makes self- and peer-evaluation simpler and more rewarding.

Course evaluation

Course evaluation can be carried out by supervisors/teachers, by course members and by other stakeholders (e.g. the community, the faculty). The purpose must be to improve the course: institutional course providers have the advantage that they deliver their courses year after year, allowing plenty of scope for feedback and revision. A secondary purpose might be to publish the outcomes for advocacy purposes if nutrition education needs promotion in the institution or with the public at large.

Course evaluation should be done in line with agreed course objectives, but should also evaluate the objectives themselves. Coles and Grant's model for curriculum evaluation, for example, juxtaposes the paper curriculum with the "curriculum in action" and the curriculum as experienced and perceived by the students, and picks up discrepancies and inconsistencies (see e.g. Kristina et al. 2005), using documentary evidence, observation, focus groups and interviews.

3 SUMMARY OF CRITERIA FOR GOOD NEAC TRAINING

From the above review of the literature, we have developed the following summary outline of criteria for good NEAC training: design, content and methodology.

The course design process should:

- follow a framework which includes needs analysis, objectives and evaluation
- align the objectives, the activities and the assessment/evaluation

The situation analysis should:

- take account of the NEAC capacity needs of the country or region in all sectors
- explore the nature of the work in the field, its settings, its clientele, its specific tasks and its particular challenges, with a view to building these into the course curriculum
- look into the habits, capacity, experience attitudes, circumstances and expectations of the target group and take them into account in the course design
- describe the target audience (with their help)

Objectives should:

- reflect capacity needs including those of other sectors
- aim at working competences, i.e. expert practice
- reflect the challenges of the working situation
- respond to existing professional knowledge, attitudes and practices
- favour action and practice and not be purely receptive
- include communication objectives (e.g. counselling skills, advocacy)
- be discussed and agreed at the beginning of the course

Course content/curriculum should include a number of the following competences (depending on level, length, audience and the content of other parts of the programme).

Prerequisites

- have a basic but thorough technical understanding of human nutrition and the nutritional aspects of food

Research

- carry out applied research, case studies, KAP studies, evaluations

Doing NEAC

- do community education / counselling / carry out successful NE interventions & activities
- know how to tackle prevailing nutrition misconceptions
- train others

NEAC interventions

- recognize the need for nutrition education in all relevant settings and interventions
- design and manage nutrition education programmes and projects, including formative research, developing objectives, selecting strategies, designing activities and creating messages and materials, carrying out evaluations, writing proposals, adopting participatory approaches
- assess and evaluate existing nutrition education interventions; suggest improvements
- develop NEAC curriculum
- work in a multidisciplinary team

Policy

- develop nutrition education policy at all levels
- advocate effectively for nutrition education at all levels

Concepts Understand, recognize and apply:

- social science concepts e.g. household economics
- principles of behavioural learning and learning principles specific to nutrition education
- principles of adult learning
- broad understanding of nutrition issues in society and how they can be tackled

Professional communities

- be familiar with the field of nutrition education, its history, models, concepts, issues and controversies, best practices etc.
- participate in national international communities of practice
- be familiar with own nutrition education context and its challenges
- participate in the course community through sharing, collaborating etc.

Methodology The course approach should

- involve learners in their own education
- recognize the educational value of real-life experience and make full use of its potential, through examples, cases, direct observation, practitioners etc.
- ensure that learning is practised and applied in real or realistic situations
- give an appropriate proportion of course time to supervised/mentored practice
- allow for reflection on and discussion of direct experience
- make use of stories and models

Course activities should aim to practise the learning objectives and should be related to the evaluation. The mix should include these broad activity types:

- contributing to course input, discussion and sharing experience
- observations, research, finding out
- exercises to practise concepts
- the continuous active application of learning to own context
- practising major professional tasks (real or simulated)
- reflecting on and discussing direct experience.

Assessment and evaluation

- Course feedback should result in course revisions and improvements
- The course evaluation should be in line with agreed course objectives
- Student assessments should bear a strong relationship to real world outcomes
- As far as possible, final evaluation should extend to assessing working practices

(Revised June 2012)

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The Need for Professional Training in Nutrition Education and Communication



Federal Ministry
of Food, Agriculture and
Consumer Protection

FINAL REPORT



**FAO-BMELV Project GCP/INT/109/GER:
“Training Needs Analysis:
Course in Nutrition Education, Including e-learning”**

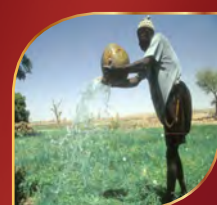
**NUTRITION, EDUCATION AND CONSUMER AWARENESS GROUP
NUTRITION AND CONSUMER PROTECTION DIVISION (AGN)**

June 2011

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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NEAC PROJECT TEAM

Ellen Muehlhoff	Project coordinator
Jane Sherman	Nutrition education consultant
Anthony Jennings	Education and IT consultant
Deirdre McMahon	Nutrition consultant
Solange Heise	Nutrition intern

SUPPLEMENTARY DOCUMENTS AND WEBSITE REFERENCES

The following supplementary project output documents are included in this folder.

DOCUMENTS RELATING TO THE LITERATURE REVIEW:

- NEAC needs in the literature
- NEAC training needs in the literature

DOCUMENTS RELATING TO THE COUNTRY CASE STUDIES:

- NEAC country case studies report
- Country surveyors
- Graphs from the questionnaires

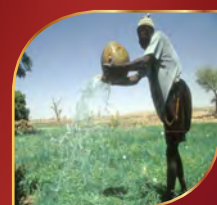
DOCUMENTS RELATING TO FUTURE COURSE DEVELOPMENT:

- Course outlines (also used in the case studies)
- Project proposal

Other project output documents and outputs mentioned in this report are to be found on the project website (www.nutritionlearning.net) and are linked to the website's front page at <http://www.nutritionlearning.net/moodle1/course/view.php?id=5&username=guest>

ACRONYMS

ADA	American Dietetic Association
AGND	Nutrition education and consumer awareness group, FAO
AMREF	African Medical and Research Foundation
BCC	Behaviour change communication
CBC	Communication for behaviour change
IEC	Information, education and communication
IT	Information technology
IYCF	Infant and young child feeding



LIDC	London International Development Centre
LMS	Learning management system
MCH	Mother and child health
MoA	Ministry of Agriculture
MoE	Ministry of Education
MoH	Ministry of Health
NEAC	Nutrition education and communication
NGO	Non-governmental organization
PLWHA	Persons living with HIV/AIDS
SAIDE	South African Institute for Distance Education

A NOTE ON TERMINOLOGY

In the course of the activities it became clear that existing nomenclature was confusing. One difficulty is that education activities in nutrition go by many different names (e.g. health promotion, awareness-raising, social marketing, information, education and communication (IEC), communication for behaviour change (CBC), demonstrations, behaviour change communication (BCC), community counselling and even, occasionally, nutrition education), each associated with different educational models, formats, processes, settings, ideologies and institutional loyalties. Another difficulty is that “nutrition education” is often taken to mean “learning about nutrition” rather than learning better dietary practices or helping people to improve their diets.

The project adopted “nutrition education and communication” (NEAC) to refer to this kind of nutrition education, in line with a well-known definition of functional nutrition education

“Nutrition education and communication” (NEAC) here means whatever gets people to improve their own health and others’ by eating better, through discussion, demonstration and practice. NB In NEAC we do not include technical training in nutrition science.

Nutrition educators are those who “do” NEAC: teachers, counsellors or facilitators who get people to improve their own health and others’ through eating better.

Nutrition education training (NEAC training) is the professional skills education needed to become a good nutrition educator, i.e. training in what effective NEAC is and how to do it (plan, promote, implement and evaluate).



as “any set of learning experiences designed to facilitate the voluntary adoption of eating and other nutrition-related behaviours conducive to health and well-being” (ADA 1996).

The definitions and explanations in the box below were developed for the project and used throughout the project activities. Nevertheless, there remained some confusion among project participants, not to mention in the world at large, between direct NEAC, NEAC training, and academic instruction in nutrition science. ¹



¹ An alternative for the future is to replace these terms with the acronym EN-ACT: Education for effective Nutrition in ACTion. This makes clear the distinction between learning about nutrition and acting to improve dietary practice, and can embrace any form of action, at any level, which is effective in producing results. It includes activities in three spheres: political, academic and community, bringing together under one umbrella advocacy, education and in-service training, as well as direct community action.

EXECUTIVE SUMMARY

Effective education is a key factor in improving nutrition and health, yet nutrition education continues to be overlooked in health and food security interventions, and is often weak or absent in professional training. In response to this gap, the “Nutrition Education and Communication” (NEAC) project was initiated by FAO’s Nutrition Education and Consumer Awareness Group (AGNDE), Nutrition and Consumer Protection Division (AGND) in September 2010 to assess the need for professional training in NEAC, with a focus on Africa. This assessment is seen as a preliminary to developing one or more learning modules in nutrition education and communication to be made available both locally and internationally.

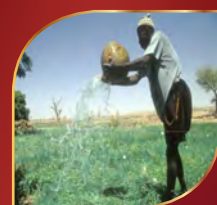
The main assumptions underpinning FAO’s initiative are that, first, there is a demonstrable need for *more NEAC* to improve diet and dietary practices; second, there is a need for *more effective NEAC*, based on empirical evidence; and finally, there is therefore a need for *more, and more effective, NEAC training* in how best to promote healthy diets and good eating habits.


The needs assessment aimed to:

- review the literature and develop (a) models of effective NEAC and NEAC training content, approaches and best practices, (b) course outlines;
- review the NEAC training available both nationally and internationally;
- explore the need and demand for effective NEAC and NEAC training in Africa through a set of country case studies, looking at existing practices, attitudes, achievements and constraints in Botswana, Ghana, Egypt, Ethiopia, Malawi, Nigeria and Tanzania;
- prioritise target groups and settings for NEAC training, national and international;
- identify suitable delivery methods and platforms (online, face-to-face or blended);
- identify suitable future partners in course development and trialling of materials;
- develop a proposal for course development;

The literature review summed up the evidence of the functional value of NEAC and NEAC training in two review documents. Each included guidelines for design and implementation:

- for “good NEAC”, a process diagram integrating the essential features of current models; lists of attested strategies for successful NEAC; and appropriate processes in formative research, learning design and evaluation;
- for “good NEAC training”, a checklist of recommended features, covering the design process, learning outcomes, curriculum and methodology.





These guidelines were used in developing the course outlines proposed in the case study surveys.

The course search and analysis focused on obtaining information about NEAC training available in Africa and internationally, to show accessibility and prevalent learning models. Although much interesting material was found and catalogued, there were difficulties in finding directly relevant courses or enough key information on courses to assess whether they met the criteria for “good NEAC training”. One conclusion is that if it is difficult for a dedicated team to track down relevant and accessible training it must be even more difficult for a student. The analysis is continuing.

The country case studies In each country a “surveyor” interviewed 14 to 20 national experts in universities, training institutions, ministries and projects, most of whom were themselves NEAC educators or trainers. They also gathered data from NEAC trainees and briefly surveyed national media coverage of nutrition issues. Each produced a report collated from the responses.

The reports consistently endorsed a strong need for NEAC and NEAC training, noting that:

- NEAC has a very low profile in national consciousness, the media, national policy and strategy, institutions, capacity building, agriculture, food security interventions, school curricula and the education of health professionals. Apart from normative MCH and IYCF counselling in the health service, NEAC activities are largely uncoordinated and there is little inter-sectoral collaboration. However there are signs of growing interest at all levels;
- standard NEAC approaches are largely top-down and one-way, and effectiveness is rarely assessed. A few innovative programs were reported involving demonstration, community mobilization, participatory needs analysis, and passing on learning;
- NEAC training is rare, sometimes non-existent. In university degrees it may be a small element (often elective), almost always with an academic lecture-based approach; in-service NEAC training is mostly occasional or ad hoc, designed for specific interventions. There are almost no qualified instructors and the design framework generally lacks formative research and evaluation. In some places, however, NEAC training for extension workers is under way;
- groups most in need of NEAC were said to be (in order) pregnant women and mothers, schoolchildren and the general population. Those most in need of NEAC training were health professionals, school teachers and extension workers in agriculture and community health.

The reports indicated a general consensus on desirable curriculum content, on the need for a practical work-oriented skills-based approach and on the importance of cross-sectoral

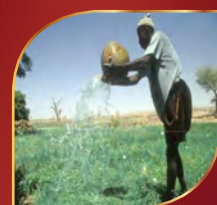
participation. Three proposed courses attracted almost equal support: an undergraduate/basic NEAC course; a postgraduate/in-service course with a management emphasis; and an extension course. Several suggested that capacity needs might best be met through a framework of all three, which would extend and reinforce each other.

Target groups, platforms and partners All case study respondents preferred a blended learning format: some distance-learning (on CD) and some face-to-face instruction. The project also found a developing international market in online learning for health professionals at all levels. To meet both needs, course provision needs to be adaptable to most formats: online or face-to-face; self-study, group study or formal courses. Guidelines and training on the adaptation of materials to different contexts should be available.

Possible future partners, national, regional and international, were identified for trialling course materials and eventual adoption of courses, and for developing and permanently hosting a related training of trainers course.

Discussion and conclusions The threads of the needs assessment came together to demonstrate that NEAC is of critical value in improving nutrition status, that NEAC training is needed to make it effective, and that both are lacking. Professional skills training resources are needed which will produce competent practitioners capable of handling NEAC effectively in all local settings. These resources should be comprehensive, adaptable, action-oriented, skills-based, economical, accessible and widely available.

Although capacity building evidently requires training at several levels, the least problematic entry point was felt to be the undergraduate-level module, which can also be offered independently as a course in BASIC NEAC. In addition, the essential cross-sectoral orientation will mean making some training in basic nutrition available to non-nutritionists, and there will also need to be some training of trainers to enrich existing "information transmission" approaches. A project proposal incorporating these and other elements has been made.



CHAPTER 1.

INTRODUCTION

Effective education is an important factor in improving nutrition and health; however, nutrition education continues to be overlooked in health and food security interventions, and is often weak or absent in professional training. In response to this gap, the “Nutrition Education and Communication” (NEAC) project was initiated by FAO’s Nutrition Education and Consumer Awareness Group (AGND) in September 2010 to assess the need for professional training in NEAC, with a focus on Africa. This assessment is seen as a preliminary to developing one or more learning modules in nutrition education and communication to be made available both locally and internationally.

1.1 THE ASSUMPTIONS

The main assumptions underpinning FAO’s initiative are that:

- *There is a great need for more NEAC* Nutrition education enhances the impact of nutrition and food security interventions and is often critical to their success. Long-term nutrition education develops popular capacity to make good dietary choices and builds self-reliance.
- *There is a need for more effective NEAC* Much “education” in healthy eating, based on inadequate concepts of how practices change, has failed. These concepts remain widespread in the related professions, while inadequate evaluation and impact assessments perpetuate failure. At the same time, a growing body of research and practical experience is demonstrating the factors that make for long-term success in improving dietary habits. Organized nutrition learning needs to take account of this in its design and methodology.
- *There is therefore a need for more, and more effective, NEAC training* Many of those who are charged with promoting healthy eating have no training as “nutrition educators” and often their induction consists mainly of learning about nutrition, or sometimes about communication theory. To build countries’ capacity for tackling nutrition issues, there is a need for professional training in how to promote healthy diets and eating habits.

(See also [Rationale](#) on the project website.¹)



¹ <http://www.nutritionlearning.net/moodle1/course/view.php?id=5&username=guest>



1.2 OBJECTIVES

The objectives of the needs assessment were to:

- explore the need and demand for effective NEAC and NEAC training in Africa, looking at existing practices, attitudes, achievements and constraints;
- develop models of effective NEAC and NEAC training content, approaches and best practices to act as assessment yardsticks and as a basis for eventual curriculum and course development;
- review the NEAC training available both nationally and internationally, its accessibility, probable effectiveness, and applicability to learners in developing countries;
- identify and prioritise target groups and settings for NEAC training, national and international;
- identify suitable delivery methods and platforms (online, face-to-face or blended);
- identify suitable partners in course development and trialling of materials;
- develop a project proposal for course development, with (a) provisional course outline(s).

1.3 ACTIVITIES

The needs assessment was carried out from September 2010 to June 2011 by a team of five consisting of the FAO team leader, three part-time consultants and an intern.

The main activities were:

- conducting exploratory interviews with experts and possible partners;
- carrying out a literature review;
- collecting and analysing available courses and learning materials;
- developing course outlines;
- carrying out case studies in African countries;
- drafting a project proposal for course development.

Supporting activities were:

- setting up a work sharing and promotion website, using Moodle software, which has the potential to be developed into a learning platform;
- establishing databases for the literature and course information/materials;
- writing reports and support documents.

CHAPTER 2.

THE QUESTIONS TO BE EXPLORED

The specific questions to be explored in the needs assessment were:

2.1 THE NEED FOR NUTRITION EDUCATION AND COMMUNICATION (NEAC)

GENERAL

a) *Is there a demonstrable need for NEAC?*

- as a complement/support to other nutrition, health and food security interventions;
- independently, as opposed to other ways of improving nutrition.

LOCAL

b) *What importance/value is given to NEAC within countries? - as evidenced by:*

- the profile of NEAC in national food security, health and education policy;
- the importance given to NE by national movers and shakers;
- its presence in projects/programmes of different kinds (nutrition, food security, health promotion);
- its presence in school and teacher education curricula;
- its presence in professional training for various groups;
- its profile in undergraduate and postgraduate education (health, agriculture, nutrition, education);

c) *In which groups and settings is NEAC mainly focused?*

d) *What are the problems?*

2.2 THE NEED FOR MORE EFFECTIVE NEAC

GENERAL

- what is effective NEAC? – i.e. what is the yardstick?
- what are the criteria for assessing effectiveness of NEAC interventions? (e.g. biological effects, knowledge gain, changes in practice, long-term understanding/nutrition literacy, sustainability of these effects)?
- what are the prevailing models of NEAC and how well do they work in terms of these criteria?
- what are the generic features and the core processes of effective NEAC?
- what is the essential design process?



LOCAL

- a) *How effective is current NEAC?*
- what NEAC approaches are prevailing in the countries surveyed? Are they likely to be effective?
 - what evaluation has been carried out?
 - how are prevailing NEAC approaches perceived by planners/educators/targets?
 - is there a need for paradigm change?
- b) *what are the problems?*

2.3 THE NEED FOR MORE AND MORE EFFECTIVE TRAINING IN NEAC

GENERAL

- (a) *What are the generic features and the essential design of effective NEAC training? (models, best practices)*

LOCAL

- (a) *What NEAC training is being done, where, by whom and for whom?*
- (b) *What is the quality of existing NEAC training? How fit to purpose? What needs strengthening?*
- (c) *Who should be trained? Which professional groups have most influence on the nutritional behaviour and outlook of the population?*
- (d) *What demand is there for more and better NEAC training?*

2.4 THE NEED FOR NEW COURSES

GENERAL

- (a) *What NEAC training is available nationally and internationally?*
- how does it measure up to the criteria and best practices?
 - how suitable is it for developing country professionals? (fit to context, accessible)
 - is there a general need for new NEAC training courses?

LOCAL

- (a) *What NEAC training courses are most needed within the countries?*
- (b) *What kind of support is needed? (e.g. attitudes, policy, funding) What advocacy is needed?*
- (c) *What are the problems?*

BOTH GENERAL AND LOCAL

- (a) *What partnership arrangements can be set up?*
- (b) *What format/platform/delivery systems will work best?*

CHAPTER 3.

DESIGN AND METHODOLOGY

Some considerations which shaped the project's approach were: ²

- a focus on university courses, including modules in undergraduate and postgraduate degrees, and professional in-service training at management and extension levels;
- a hierarchy of needs: for better nutrition; for more effective nutrition education (NEAC); and for effective NEAC training (educating the educators);
- the need to address multi-sectoral settings (health, education, agriculture);
- the importance of focusing on working practices, looking at what is done and what is recommended;
- the effect of national awareness, policy, strategy and capacity on NEAC provision;
- allowing for both national and international provision and delivery possibilities.

The main activities are described below. For more detailed information see the [project website](#)³ and the Supplementary Documents linked to this report. The findings are outlined in Section D.

3.1 PRELIMINARY QUESTIONNAIRES AND INTERVIEWS

A short preliminary questionnaire was devised as a general probe (see project website: [INITIAL QUESTIONNAIRE](#))⁴ and circulated to several events and associations. Although few replies were received, they helped to establish further contacts and the answers confirmed that NEAC training was not widespread. Telephone interviews were carried out with academics and course providers to get background orientation and details of existing courses, identify suitable countries for case studies and possible surveyors, and explore partnership possibilities (see [SUMMARY OF INTERVIEWS](#) on the project website).

3.2 THE LITERATURE REVIEW AND COURSE OUTLINES

The literature review aimed to explore global needs for NEAC and NEAC training, identify best practices and develop templates of recommended NEAC approaches and NEAC training. It was also useful for identifying potential course resources and relevant organizations.

² For some models and terms of formative research, see MODELS OF FORMATIVE RESEARCH in REFERENCE DOCUMENTS on the project website <http://www.nutritionlearning.net/moodle1/course/view.php?id=5&username=guest>

³ <http://www.nutritionlearning.net/moodle1/course/view.php?id=5&username=guest>

⁴ <http://www.nutritionlearning.net/moodle1/course/view.php?id=5&username=guest>





A search was carried out (for details see project website: [Questions, search terms, databases and journals](#)). Important points were gathered into five summaries (see website: [Summary reports on the literature](#)). This literature and other relevant materials were then reviewed in order to produce:

- a review of NEAC theory and practice, with a template of generally approved processes and features (see Supplementary Document [NEAC NEEDS IN THE LITERATURE](#) in this folder);
- a review of “ideal” NEAC training, with a checklist of desirable features (see Supplementary Document [NEAC TRAINING NEEDS IN THE LITERATURE](#) in this folder);
- four course outlines, based on the principles and practices identified, to be proposed to the case study respondents (an undergraduate-level module, a postgraduate/in-service course with a management orientation, an extension course and an advocacy workshop) (see Supplementary Document [Course Outlines](#) in this folder).

By-products of the review (information about course resources, organizations active in the field, important websites etc.) were collected in the website glossary for future reference.

3.3 THE COURSE SEARCH

The course search focused on obtaining information about available NEAC training in Africa and internationally, to show what is typically available and accessible, what learning models are most prevalent and (hence) how effective such training is likely to be.

A web search was carried out to find university degrees in nutrition or allied subjects (Home Economics, Health Promotion, Community Health) with NEAC elements. Internationally the search was limited to courses targeting developing countries, including those developed by major NGOs and aid agencies. Follow-up e-mail and telephone contacts were made to obtain further information on resources (see [Review of literature and training courses: Methodology](#) on the project website).

The materials gathered were entered in a database and then analysed. This process is not yet complete, but some general findings have emerged (see Chapter 4).

3.4 THE COUNTRY CASE STUDIES

Case studies were carried out in seven African countries (Botswana, Egypt, Ethiopia, Ghana, Malawi, Nigeria and Tanzania) during February-April 2011. The studies aimed to explore the need for NEAC and NEAC training, looking at nutrition interventions, ongoing NEAC activities, NEAC training and perceptions of needs (see [Country case studies](#) on the project website).

Choice of format, surveyors and countries For reasons of cost and coverage, the format chosen was a “dispersed expert consultation”: a surveyor in each country carried out interviews with local experts, gave a questionnaire to NEAC trainees, reviewed one week’s media coverage for nutrition issues, and produced a report. Surveyors were selected



on the basis of their wide knowledge of their country's nutrition issues and activities, their reliability in communications and their personal interest in developing NEAC training (a list can be found in [Country Surveyors](#) in this folder). With supplementary funds from FAO, the number of countries was extended from three to seven to get a more representative picture, with a good spread in terms of size, relative wealth and geographical distribution.

The survey protocol The survey documents developed were an interview questionnaire, including four notional course outlines; a questionnaire for students; a Surveyor's Guide; a briefing sheet for informants; and a report form to guide surveyors (see [COUNTRY CASE STUDY SURVEY DOCUMENTS](#) on the project website). It is hoped to revise these documents and make them available for use in other countries which wish to carry out a relatively inexpensive needs analysis.

Interviews Each country surveyor selected for interview:

- two key informants with an overview of national nutrition issues
- relevant officials from the ministries of health, agriculture and education
- as far as possible, four "nutrition educators" and four "NEAC trainers" for information about specific learning activities (not all countries could find enough of either group).

The interviews covered the following ground:

- A Background and overview: nutrition issues and interventions; history of NEAC
- B The need for nutrition education
- C/D How NEAC is being done: common processes and approaches; specific programs
- E The need for NEAC training
- F/G How NEAC training is being done: general perceptions of processes and approaches; specific programs
- H NEAC training: desirable content and approach
- J NEAC training needed
- L Further participation: interest in participating in course development.

Piloting, monitoring and troubleshooting The draft questionnaires were piloted on a small sample at FAO HQ and were circulated to prospective surveyors for comments. The first interview by each surveyor was posted on site as a model for others. The website forum and e-mail was used for monitoring and troubleshooting, with each member of the NEAC team responsible for two or more of the surveyors.

Country backgrounds and NEAC issues The project team contributed by researching nutrition and NEAC activities in the survey countries (see [Country Background](#) on the project website). A number of NEAC issues were also posted on the project website forum. Surveyors were asked to initiate a forum discussion and to encourage interviewees and students to take part.

Revision of reports; extra documentation; summary of findings Surveyors' final reports were read and commented by the project team, revised by surveyors, edited and posted on the website. The completed questionnaires were returned to the project team, who entered the data in a database. A conflation of all the case study reports was produced (see Supplementary Document [NEAC Country Case Studies Report](#) in this folder).

3.5 SEARCH FOR PARTNERS

The needs assessment looked for possible future “piloting partners”, both national and international, for trialling materials and eventual adoption of courses. At national level, questions were included in the survey interviews about which proposed courses would be most valuable to the respondent’s institution, and what participation respondents were interested in. Potential international partners were sought among online course providers dealing with work-oriented, practice-based training for health professionals in developing countries, especially those with modular programs which could accommodate an extra or alternative module. Other criteria considered were:

- good contacts with appropriate markets;
- an established reputation in health education for developing countries;
- IT expertise;
- experience in materials development for effective professional skills training;
- efficient administration for organizing piloting and feedback;
- willingness to discuss and experiment.

A well-known regional partner was also sought for developing and permanently hosting a related training of trainers course during the next phase of the project, and generally to act as a regional centre for NEAC capacity development once the project is over, through providing courses, training trainers, running curriculum development workshops or advocacy events, and possibly developing further courses for other target groups.

The partners identified are discussed in 4.4.

3.6 RESEARCH INTO COURSE DELIVERY PLATFORMS

Recognizing the attractions and the obstacles of distance-learning (DL), the needs analysis looked into its feasibility and effectiveness in the African context. The study considered several forms of DL:

- paper-based, as in traditional correspondence courses, still in use in Africa
- offline e-learning, similar to paper-based, with learning materials on CD-ROM or USB drive
- online learning with internet, in Africa often through an internet point, in a student resource centre, or through mobile devices (“m-learning”)

Distance learning and face-to-face learning are seen not as alternative modalities but as lying on a continuum of various forms of “blended learning” (SAIDE 2000).

Questions explored were the state of connectivity, the level of internet use, the reliability and coverage of electricity supply, the level of computer literacy of teachers and learners, DL formats in current use in Africa, and the acceptability/attraction of distance learning. Also explored was the existing international market in on-line education for health professionals.



Approaches adopted were:

- assistance learning materials currently in use in Africa were collected: for example, AMREF provided Units 6 (Health Education, Promotion & Counselling) and 7 (Nutrition) of their Child Health Course. Other courses reviewed are listed on the project website;
- in all preliminary interviews, informants were asked to give their personal opinions and experience of distance learning in Africa;
- a section of the country case studies questionnaire gathered informants' views on the feasibility of different forms of face-to-face and distance learning, including capacity and preferences.

3.7 DEVELOPMENT OF PROJECT WEBSITE

A project [website](http://www.nutritionlearning.net) (www.nutritionlearning.net) using the Moodle open-source LMS software was created in September 2010 as a work-sharing site for the NEAC team. The site was made public in January 2011 with the working discussions hidden and linked to the official FAO website on 24 March ([HTTP://WWW.FAO.ORG/AG/HUMANNUTRITION/NUTRITIONEDUCATION/69725/EN/](http://www.fao.org/ag/humannutrition/nutritioneducation/69725/en/)).

The website supported the project activities in a variety of ways. It was used in particular for group working, via the use of the wiki facility for collaborative document writing, for communication with country surveyors via the forums, as an archive for minutes of meetings and working records and to display information and advocacy materials. Moodle, which is designed for educational use, is particularly rich, flexible and easy to handle, and has further potential for advocacy, delivering courses and supporting course development work. For some data on public access to the website see 4.6.

CHAPTER 4.

MAIN FINDINGS

Some of the data from the questionnaires can be found in [Graphs from Questionnaires](#) (in this folder).

4.1 LITERATURE REVIEW: WHAT DOES THE LITERATURE SAY?

NEAC NEEDS IN THE LITERATURE

The evidence of the need for nutrition education and communication, as represented in the literature, is presented in the Supplementary Document [NEAC Needs in the Literature](#) (in this folder), of which the following is a summary.

The need for nutrition It is increasingly recognized that good nutrition is essential to development, yet nutrition has been poorly funded, thinly represented in public health courses and qualifications, and has had a low profile in government policy, strategy and national capacity, and in food security interventions.

The need for NEAC The value of education in tackling nutrition issues is strongly supported by the literature, both as a complement to other interventions and as a stand-alone alternative to other ways of improving nutrition status. NEAC has been found critical in food security initiatives, in direct nutrition interventions such as food supplementation and food fortification, while well-conducted NEAC is effective both on its own and embedded in normal health care routines. Yet there is a paucity of NEAC activities worldwide in all sectors (health, education, agriculture).

The need for more effective NEAC Broadly, the literature discusses three models or approaches:

- **Knowledge-based approaches** Pure information delivery, which is the least effective instructional strategy for promoting dietary change, remains the most common approach in nutrition education.
- **Behaviour change approaches** aim to develop practical behavioural messages and to spread them wide. Social marketing focuses on formative research, development and dissemination of appropriate messages for a segmented audience. Behaviour change communication (BCC) has been extensively operationalised and evaluated and has opened up social and participatory dimensions.
- **Health promotion** has provided some defining principles for a parallel evolution in nutrition education, emphasising self-determination, life skills, participatory approaches, the need for a conducive policy environment and supportive networks to encourage and sustain behavioural changes.





Generic features and core processes of effective NEAC Since the main behaviour-oriented movements in NEAC have strong shared interests, it is possible to assemble a common core. The following three protocols were developed from the literature review and were used to determine questions asked in the country case studies. They can also be used in curriculum development and as checklists for assessment of NEAC interventions:

- a process diagram integrating the main essential features of current models;
- lists of empirical “meta-strategies” for success in NEAC;
- appropriate economical and user-friendly design processes in formative research, learning design and evaluation.

NEAC TRAINING NEEDS IN THE LITERATURE: A CHECKLIST

The separate document [NEAC training needs in the literature](#) (in this folder) reports on opinions in the literature on what kind of NEAC training is needed to ensure that NEAC will be effective and sustainable. The main findings were assembled into a summary checklist of recommended features of NEAC training, summarized below. The checklist formed the basis for some of the questions in the country case study questionnaires and for the evaluation of available NEAC training courses and materials, and will be a formative element in curriculum design.

4.1.1 SUMMARY CHECKLIST FOR GOOD NEAC TRAINING

General framework The course should have an applied orientation, draw on theories and experiences of work-related learning and be seen as a behaviour change intervention.

The course design process should include needs assessment, objectives, evaluation and revision and should align learning objectives and activities. The situation analysis should explore aspects of audience, work and context. These enquiries should also be pursued by the learners, so that the analysis is ongoing and participatory.

Objectives/learning outcomes should:

- reflect capacity needs across several sectors;
- reflect the challenges of the working situation;
- respond to existing professional knowledge, attitudes and practices, with special attention to misconceptions and unproductive practices;
- aim at working competence, i.e. expert practice, and express action/practice targets
- include communication objectives (e.g. counselling skills, advocacy);
- be discussed, understood and agreed at the beginning of the course and during it.

Course content/curriculum Target competences may include these capacities:

- understanding nutrition issues and own nutrition context; recognizing challenges and ways of tackling them;
- recognizing the need for NEAC in relevant settings; evaluating NEAC activities;
- developing curriculum; designing and managing NEAC programs and training others to do so;
- developing NEAC policy and advocating for NEAC;



- being familiar with the field of nutrition education and its best practices;
- understanding and applying social concepts, principles of behavioural learning, and principles of adult learning;
- participating in communities of practice.

4.2 COUNTRY CASE STUDIES: WHAT IS THE SITUATION ON THE GROUND?

BACKGROUND

The country case studies took place in Botswana, Egypt, Ethiopia, Ghana, Malawi, Nigeria, Tanzania, over a two-month period in early 2011. These studies formed an integral part of the complete NEAC needs assessment project and surveyors were carefully selected to carry out the assignment (see Supplementary Document [Country Surveyors](#) in this folder).

Seven country case study reports were produced along with a final report which provides a unified account of the seven countries. Findings are fully reported in the individual country reports on the website and the [NEAC Country Case Studies Report](#) (in this folder). Tables from some of the data gathered from the questionnaires can be found in [Graphs from Questionnaires](#) (in this folder). The following summary outlines the objectives, the main findings and the associated challenges.

OBJECTIVES

The objectives of the country case studies were to understand better who needs NEAC training and by whom it could and should be done; and how, specifically, to explore needs relating to NEAC and NEAC training in order to:

- assess the need for more and better NEAC, and hence the need for more and better NEAC training;
- gather opinions on what kind of training is most needed and for whom;
- collect suggestions for course content and approach;
- collect perceptions of desirable format and delivery;
- identify institutions interested in using some of the possible products;
- identify experts interested in helping to develop the course by providing information, experience and case material, reviewing the materials and (possibly) piloting them.

MAIN FINDINGS

Surveyors and respondents endorsed a strong need for nutrition education, nutrition educators and nutrition education training. The main findings include:

The nutrition picture

- malnutrition persists with alarmingly high rates of under-nutrition in the surveyed countries, particularly in the under-five age group, with increasing prevalence of overnutrition;
- national strategies tend to prioritise direct nutrition interventions such as food



fortification and supplementation. Health sector activities commonly focus on IYCF and growth monitoring but also on clinical rehabilitation of malnourished children and support for PLWHA. A nutrition emphasis in food security interventions is rare.

The situation of NEAC and NEAC training

- NEAC has had and continues to have a weak presence, even sometimes apparently a declining one. It remains largely uncoordinated between initiatives and sectors, and seldom validated;
- NEAC and NEAC training approaches are largely top-down and based on information transfer. Learning approaches, especially in universities, are largely academic: all respondents expressed preferences for more active and interactive approaches with a more practical orientation;
- NEAC training is reportedly difficult to find, partly because it is rare (some said non-existent) and partly because it is embedded in a variety of curricula and settings under a variety of names. In academia it can be found as elements of nutrition and dietetics degrees, Home Economics degrees or health promotion training. In-service NEAC training is largely occasional or ad hoc, designed for specific interventions, although in several countries some NEAC training for extension workers and teachers is institutionalized, or about to be;
- almost no NEAC trainers/lecturers have specific NEAC qualifications and some universities are having to import instructors;
- respondents agreed that the process framework in existing NEAC training typically lacks preliminary formative research and follow-up evaluation.

Need for NEAC and NEAC training

- the overwhelming perception is however that more and better NEAC training can play a valuable role in addressing malnutrition issues;
- groups most frequently said to be in need of NEAC are (in order) pregnant women and mothers, schoolchildren and the general population, while professionals who most need nutrition understanding and NEAC skills in order to be effective nutrition educators are health professionals, school teachers, agricultural extension workers and community health workers (see data analysis from Questionnaires on the [project website](#));⁵
- it was stressed that NEAC must be implemented clearly and constructively in national nutrition policies, programmes, institutions and curricula.

Course choices and participation

- interest was spread almost equally between three of the four course choices presented (an undergraduate/basic NEAC course; a postgraduate/in-service course with a management emphasis; a cross-sectoral extension course), with considerable interest also in the fourth, an advocacy training course,⁶ suggesting that capacity needs can best be met through a framework or suite of training courses which extend and reinforce each other;

⁵ <http://www.nutritionlearning.net/moodle1/course/view.php?id=5&username=guest>

⁶ Outlines of these courses can be found in the annex to the Interview Form used in the survey, on the project website under COUNTRY CASE STUDY SURVEY DOCUMENTS.



- overwhelmingly, respondents opted for a blended learning approach with some distance-learning materials mixed with face-to-face sessions: interest was expressed in e-learning but the practical difficulties were seen as decisive for the moment;
- most respondents were interested in participating in the development of one or more of the courses in some way, for example in supplying learning resources and stories, reviewing materials etc. Considerable numbers expressed the desire to be involved in piloting.

CHALLENGES

In line with the findings, respondents mentioned a number of recurring challenges:

National

- lack of nutrition and NEAC awareness at policy level;
- inadequate funding for nutrition and NEAC interventions;
- poor institutional presence of NEAC and lack of prioritisation from professional associations;
- poor employment opportunities for nutritionists;
- thin coverage in school curricula;
- lack of distinction made between food security and nutrition security;
- lack of a multi-sectoral approach: for example, absence of nutrition posts or policy in the MoA and MoE; nutrition-insensitive agriculture interventions; nutrition interventions which do not integrate related sectors/disciplines. Co-ordinating nutrition-related activities between the ministries, governmental organizations and NGOs is critical to economy of effort, spreading good strategies and gauging how the country is tackling malnutrition.

National context

- poor social awareness of nutrition and the lack of appreciation of its importance among all groups and all levels of society;
- competition from commercial marketing products and services that allegedly improve health.

Capacity

- lack of professional nutrition educators; lack of competence in NEAC;
- lack of professional nutrition education trainers with competence in NEAC;
- traditional training e.g. information delivery (talks, lectures) rather than participatory and skills-based.

General fragmentation/lack of coordination

- fragmentation of nutrition activities at community level due to lack of co-ordination between NGOs, International organisations and local government

Management/Logistics/Funding/Resources

- challenges in coverage, particularly in rural communities, or limited channels such as health clinics;
- lack of resources, e.g. for scale up of successful project interventions, for program development at community level;
- duplication of efforts, misuse of resources and underutilised human resources.

4.3 COURSE SEARCH: WHAT'S AVAILABLE?

Since the materials database and analysis are not yet complete, the following findings are provisional, although they are generally upheld by the findings of the case studies:

- *NEAC training is generally lacking* Many major international course providers dealing with health issues for developing countries do not cover nutrition, and many which deal with nutrition do not touch on NEAC. A large proportion of university Departments of Public Health, both international and African, have no nutrition or NEAC courses; many nutrition degrees have no NEAC or “community nutrition” component, while in most others it is an elective module.
- *There is very little purpose-built NEAC training* The “relevance to NEAC” column of the database produced a small number of “spot-on” entries, a few “very relevant” and many “fairly relevant”, including, for example, reference materials; manuals and guidelines; materials targeted at very specific countries, issues and settings; manuals focusing on specific parts of the educational process; and programs with a wider brief (e.g. health education).
- *Information is lacking* For the vast majority of course outlines and learning materials collected, there was not enough information to make it possible to assess whether they fulfilled the main criteria for “good NEAC training” in respect of course development, content and approach (see Summary Checklist for good NEAC training in 4.1.1 above). Some met one criterion, but not others; some sounded promising but did not give enough detail; some were excellent but had a very specific focus and target group. The vast majority were thin on practice and real-life application.

The tentative conclusion is that the gaps in nutrition educator training cannot easily be filled with existing resources, even if they were cheap and easily accessible. The search was unable to track down comprehensive, action-oriented, skills-based, economical, available, professional skills training which will produce a competent practitioner capable of handling NEAC effectively in all local settings.

4.4 SEARCH FOR PARTNERS: WHO CAN WE WORK WITH, AND HOW?

At national level the case study questionnaires identified a good number of potential partners interested in both adopting a course and piloting it: for example 18 institutions expressed a need for undergraduate-level course and said they would be willing to pilot learning materials. Of these ten were universities, with some special pleading on behalf of particular universities in Nigeria, Ethiopia, and Botswana.

Three international partners were found who were interested in participating in piloting NEAC course materials: The People’s University,⁷ AMREF (the African Medical and Research Foundation) and McGill University (Grace Marquis, professor of International Nutrition), all concerned with health education, all aiming at developing countries and all interested

⁷ The People’s University is an international internet-based online learning organization using Open Education resources and dealing with public health capacity building in low- to middle-income countries. It already offers a module in Public Health Nutrition.



in professional training. It is also planned to invite interested international organizations and NGOs to nominate individual guinea pigs to try out the course individually on the project's own platform. This should excite some international interest, provide expert feedback and test the course for the wider market.

As potential regional partners, both AMREF and SAIDE (the South African Institute for Distance Education) were well qualified to develop a training of trainers course and both were interested in collaboration. AMREF, which is concerned with the education of health professionals, is particularly well placed also to act as a permanent regional centre for NEAC activities.

4.5 PLATFORM: HOW SHOULD THE COURSE BE DELIVERED?

In general, internet access is poor and costly in Africa. In many countries electricity supply is unreliable and intermittent, with the consequence that the internet cannot be accessed even where a good broadband connection is available. However, the situation is likely to improve dramatically over the next few years, with the opening of large undersea cables to East, West and Southern Africa.⁸ The improved supply and the strong demand for more competitive prices (particularly for smart phones) is expected to drive the cost of internet access gradually down. These developments have already had an impact on education. One informant reported that for graduate students in Nigeria, "having a PC is more important than getting admission",⁹ especially for accessing online information. Various organizations, notably AMREF have experimented large scale e-learning programs with success (Accenture 2011).

There is also a growing international market in online health professional training targeted at developing countries: some examples of online course providers are AMREF, the People's University, Maastricht University, LIDC (London), Johns Hopkins Bloomberg School of Public Health, UNISA/SAIDE and the HEAT distance-learning program for extension workers in Ethiopia.

Levels of IT use vary dramatically from country to country, however, standing at over 10% in Nigeria and under 1% in Ethiopia,¹⁰ with low levels of IT literacy among some teachers and many students. Personal computer ownership is low, and access is often available only through expensive internet cafes, which restrict user time and limit skills development. (AMREF's large program for online training of nurses in Kenya relies on substantial input of IT resources and skills by Accenture, their partner in this project.)

Format preferences Partly for these reasons, and partly out of an appreciation of the value of face-to-face interaction, most respondents in the case studies (44 out of 82, or 54%) indicated that some form of blended learning would be most suited to their institutions. The second most popular option (30/82) was a traditional face-to-face

⁸ See map (updated May 2011) at <http://manypossibilities.net/african-undersea-cables/>

⁹ Juliet Oluchi, University of Ibadan, telephone interview in October 2011

¹⁰ See Africa Connectivity Map reproduced at <http://www.nutritionlearning.net/moodle1/course/view.php?id=5>



format. The remaining eight respondents chose pure distance learning, whether paper or electronic based, online or offline. Demand for online learning was considered “low” by 50% of respondents and “medium” by 37%, while technical and human capacity (in terms of internet coverage, bandwidth and cost, electricity supply, availability and distribution of computers, learner and teacher computer skills) was considered “low” by 75%. Many respondents felt that the advantages of blended learning outweighed the risks, but that a course based entirely on distance learning materials would not have a good chance of success.

4.6 STATISTICS ON THE PROJECT WEBSITE

In mid-March 2011 the project site was registered with Google Analytics, which began to collect data on visitors. In the following 3 ½ months, 626 visits to the site and 4,699 page views by a total of 150 unique visitors were recorded, with an average of 7.5 pages viewed per visit. Visitors came from a total of 33 different countries in all parts of the world, including five African countries not involved in the survey (Cameroon, Kenya, Namibia, South Africa and Uganda). Excluding the FAO NEAC team, the highest numbers came from Egypt, Ethiopia, Germany, Tanzania and Brazil, in that order. With the exception of direct access to the URL by members of the FAO NEAC team, the most frequent route to the site (244 visitors) was via the FAO nutrition web pages. A breakdown of this information is available on the [home page of the website](#) itself (“Statistics on website access”).

CHAPTER 5.

LIMITATIONS AND LESSONS LEARNED

A built-in limitation of the needs assessment was the restriction of the enquiry to courses which could be offered by universities. It was clear from the country case studies that other sectors also had high-priority needs, in particular education (schools and teacher education) and professional training for health professionals (doctors and nurses).

5.1 LITERATURE REVIEW AND COURSE SEARCH

Limitations of the literature review A great deal of nutrition education is below the search radar, covered under other terms or not acknowledged in article titles or abstracts. It is probable that much slipped through the net of search terms; moreover the search by keyword did not easily uncover negative evidence of nutrition education missing where it might have been expected. The literature needed also to be supplemented by information on educational models and trends.

Limitations of the course search The search encountered several challenges due to various locations of NEAC in the curriculum, varied terminology and poor communications. It produced a large number of courses and training materials but seldom enough key documentation to allow courses to be assessed. It is possible to draw some general conclusions, and it will be useful to collect valuable elements into an archive for use as models and references in course development. This process is still ongoing.

5.2 CASE STUDIES: LIMITATIONS AND STRENGTHS

Strengths It was illuminating to look at the representative work of national professionals on the ground rather than at published articles. The study brought out individual perceptions well and the small sample allowed for individual attention to problems.

Drawbacks and remedies There were some delays in completion. One survey was interrupted by a revolution (viz. Egypt) and finished late. Some countries had very little NEAC or NEAC training activity to report. Although there was a common report format, some reports had a statistical approach and some were more subjective. The qualitative orientation of the survey invited some impressionistic and unsupported statements, omissions and distortions. However, all the questionnaire responses were analysed to support the general conclusions of the survey reports.





In spite of our best efforts the main terms used created confusion, which mingled with a confusing picture on the ground; however, it was generally possible to identify and classify the activities described.

These points will all be in borne in mind in the revision of the survey documents.

CHAPTER 6.

DISCUSSION AND CONCLUSIONS

Some of the key questions which should determine future action are discussed below.

6.1 IS NEAC TRAINING A HIGH PRIORITY NEED?

The profiles of NEAC and NEAC training were conspicuously low in the countries sampled. However, “need” is a compound of not only lack but also value. Is this where development efforts should be made? Existing policies, strategies and activities often appear to work on the implicit assumptions (a) that there are quicker, more effective and cheaper ways of improving nutrition status than NEAC (for example, food fortification, supplementation); (b) that NEAC often does not work; and (c) that the most important capacity need is for more nutritionists rather than nutrition educators.

Well-substantiated counter-arguments are that NEAC is often critical to the success of nutrition and food security interventions, is economical and has sustainable effects; (b) that NEAC works if it is done properly and hence that training is needed; (c) that more nutritionists will not lead to more and better NEAC unless nutritionists understand education and communication with a focus on behaviour change, and that many who are not nutritionists can benefit from NEAC training. Our needs analysis strongly supports these views.

6.2 WHAT EXACTLY IS NEEDED?

MULTISECTORAL PARTICIPATION

Many have argued in favour of multi-sectoral participation in NEAC training on the grounds that:

- qualified nutritionists are too few to provide an adequate base;
- most NEAC work is actually done by non-nutritionists;
- NEAC depends on competent practitioners at all levels;
- NEAC depends on the food cycle (from plot to pot); hence it is multi-sectoral by nature and an essential catalyst in food security interventions;
- NEAC needs a many-sided approach.

However, broadening the base demands some corollary precautions:

- non-nutritionists will need some nutrition knowledge and understanding;
- advocacy is required to reach other sectors and to affect national policy;
- institutionally the course must be both owned and shared, so that it will be neither marginalized nor dominated by a specific discipline.



NATIONAL AND INTERNATIONAL TARGET GROUPS AND COURSE PLATFORM

It is likely that demand and capacity for online learning will continue to increase in Africa, that prices will gradually fall and that more educational institutions will come to adopt blended, online and distance learning provision. With this experience, teachers and students will come to appreciate that online learning, as well as facilitating academic tasks and magnifying the resource base, can also enhance the social dimension of learning. Moreover, online resources, which can easily be adapted, modified and updated, are more sustainable. There is therefore a strong case to be made for developing both online and locally situated courses (blended or face-to-face) to meet the range of present and future situations from limited (or no) access to sophisticated IT use.

In terms of platform, there are also compelling arguments in favour of open-source software, among them low cost and constant upgrades. Large open-source learning management systems like Moodle can provide a wide range of add-ons, customisation options and extensive online support. For these reasons, it was decided to create a Moodle e-learning platform, which could be used both for pure online courses and also to contribute to blended learning in a variety of ways.

The aim is to produce generic training materials which can be used in and adapted to most contexts and formats, with guidelines and training on adaptation made available. For face-to-face or blended learning, a basic course can be downloaded and delivered in a traditional format, while offering options (further reading, extra assignments, online quizzes, forum discussions, databases and resource banks, glossaries, links to web resources, templates) which can be incorporated according to the needs and capacities of a specific group of learners.

At the same time a range of online options can be offered, from independent individual learning to a full tutored course with assignments, group work and forum discussion. Care should be taken to ensure that online participants are adequately supported, especially in the initial phases, for users with limited IT skills or for those who need to learn their way around the Moodle.

In the development and piloting of course materials it is also envisaged that web tools will be invaluable because of their potential for managing feedback and recording interactions; course developers and teachers should also be able to benefit by interacting with a worldwide community with shared interests.

WHICH COURSE?

Interest in the seven case study countries was spread almost equally between three of the course choices proposed (an undergraduate/basic NEAC course, a postgraduate/in-service course with a management emphasis, and an extension course), with fewer opting for the fourth choice, the advocacy workshop.¹¹ Institutional interest in developing and hosting the courses was considerable.

¹¹ Outlines of these courses can be found on the project website, in the annex to the Interview Form, under COUNTRY CASE STUDY SURVEY DOCUMENTS.



There was thus no clear basis for choice. Several respondents made the compelling argument that interlocking capacity needs could best be met through a suite of training experiences which extend and reinforce each other. This still left the question of where to start. Some considerations were:

- **Extension training** could have immediate impact on communities, and is most open to recognizing the value of aiming at changes in practice. Scale-up costs would be considerable. Such training, with its strong local dimension, should be designed in the country: the best way to ensure this might be to incorporate extension course design into the postgraduate/in-service curriculum, or to run extension and in-service professional courses in parallel to the benefit of both trainee groups.
- **An undergraduate module** would be a very small component in a degree, and would not have an immediate effect in the working world. However, it reaches more students and instructors than a Masters-level course; it can establish basic principles and practices and prepare the ground for higher-level training; it does not require a lengthy supervised practicum. It is relatively cheap to run and if it is a core subject it is not affected by demand or fluctuating funds. A drawback is the time required for institutional approval; however it can also stand alone, certificated independently. This choice seemed to have most to offer in terms of feasibility and institutional impact.
- **A postgraduate module / in-service course** An in-service course for working professionals offers great scope for effective learning, since it can be understood from existing experience and applied immediately. It can be instrumental in rapidly improving extension training, if the appropriate institutions are able to collaborate. Drawbacks are that the pool of professionals is small; instructors with field experience may be hard to find; in-service courses require special funding and time off from work. A module incorporated in a Masters has many of the same difficulties. This course/module should be seen as an essential target, but not necessarily the place to start.
- **Advocacy workshops** The need for nutrition advocacy is often signaled, both for developing national nutrition policy and strategy and for ensuring that policy trickles down into action. Unfortunately NEAC advocacy, which should surely partner nutrition advocacy, is rarely mentioned. Findings from the case studies and the literature indicate the need for NEAC advocacy at all levels and in all sectors. Separate workshops may however be a luxury, since advocacy activities can and should be built into other training.

CURRICULUM AND APPROACH

There appears to be a foundation for consensus on outline NEAC curriculum and on the need for a practical, work-oriented, skills-based approach. However the process by which curriculum and approach are developed needs to be owned (that is, worked through) by key stakeholders (in the first instance prospective piloting institutions) and also made available to others.

At the same time, the dominance of traditional information transfer in all spheres of NEAC activity suggests that a paradigm shift in approach is called for. Some induction training for tutors/instructors may be necessary, and extensive field-testing with continuous feedback from tutors and students is advisable.

6.3 CAN IT BE DONE? IS THIS THE TIME?

With the Scaling Up Nutrition (SUN) initiative, nutrition has recently acquired new status in development activities, and NEAC is also more appreciated. There are also independent signs of progress in all the countries surveyed - in policy, strategy, capacity development and methodology, and in the enthusiasm for change and perceptions of the directions in which it should move. The development of NEAC training courses would not only address a strongly felt need but would also be a timely intervention at a moment when education is being re-valued as a key factor in improving dietary practices.

6.4 CONCLUSIONS

Some specific conclusions were:

General needs

- NEAC training can play a significant role in improving nutrition practices, yet effective NEAC training is generally lacking or inaccessible;
- what is needed are permanently available, adaptable, free training resources in practical, work-oriented nutrition education and communication;
- these should be based on the principles and approaches established by experience and research, and adaptable to local contexts and practices;
- advocacy for NEAC is essential: practice and production of advocacy activities should be included in all relevant courses and meetings.

Target groups and course choice

- a suite of training materials is required at undergraduate, postgraduate and extension levels, pre- and in-service, to create a mutually reinforcing capacity-building framework;
- the least problematic entry point is probably the undergraduate-level module, which can also be offered independently as a course in BASIC NEAC;
- if the BASIC NEAC course is successful it can be followed by the more demanding postgraduate/in-service module (ADVANCED NEAC). Extension courses could be developed in parallel with this;
- in the longer term, consideration should be given to the NEAC training needs of health professionals and schoolteachers.

Re multisectoral participation

- multisectoral participation is essential to eventual impact, should be supported by advocacy and built into nutrition and NEAC interventions;
- provision must be made for the nutrition knowledge/understanding required by non-nutritionists;



- institutional responsibility must be ensured while at the same time retaining broad ownership.

Re formats and certification

- course provision should be as flexible as possible: online and face-to-face/blended; both national and international; suitable for self-study, group study and assessed formal courses;
- training materials are therefore needed which can be adapted to most contexts and formats;
- guidelines and training on adaptation should be available;
- courses can be certificated by course providers but can also be available as an FAO “own brand”.

Curriculum development and approach

- the process of curriculum development should be owned by stakeholders and passed on to others;
- training should be offered for prospective tutors in active skills-based learning approaches.

Course development process

- extensive piloting/field-testing is advisable;
- piloting institutions should represent the spread of target audiences and delivery formats;
- course materials should be developed in line with established principles and best practices, in particular referring to real-life experiences and applying learning to real contexts;
- interested international organizations should be engaged in the piloting process.

CHAPTER 7.

OUTLINE PROPOSAL: COURSE DEVELOPMENT

Nutrition education and communication (NEAC) has proved to be an essential catalyst in nutrition, health and food security interventions. Yet its effectiveness depends on the approach adopted (as outlined in 4.1.1 above), which in turn depends on relevant and effective professional training. The present needs assessment has found that relevant training is lacking or irregularly available in most sectors and settings, and that the felt need for capacity development is high.

We would therefore like to develop a “BASIC NEAC certificate” at undergraduate level, as the first in a possible suite of learning materials which will implement the best practices of professional NEAC training and also satisfy local demand. The materials will be available for online, face-to-face or blended use and will be piloted in all these formats with both national and international partners, in order to adapt them to local context and consumer need and to establish adaptation processes.

The module will be accompanied by an optional course in basic nutrition for those who lack the essential entry knowledge; a training of trainers course will be developed by a regional partner and hosted permanently by them; and a further by-product will be a curriculum development package for use by others who wish to develop NEAC training. The project products will be disseminated on the project website.

A [project proposal](#) has been developed and can be found as a supplementary document in this folder.



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