

# Multi-sectoral nutrition sensitive response to drought emergency in Sindh, Pakistan<sup>1</sup>

By Ali Dino Kunbher, Shafqat Ullah and Mazhar Alam

**Location:** Pakistan

**What we know:** Undernutrition is multi-causal; nutrition-specific and nutrition-sensitive interventions are warranted.

**What this article adds:** A one year integrated multi-sectoral project targeted communities at nutrition risk in an emergency response to drought in Sindh, Pakistan. Government departments at district level were engaged throughout. Nutrition-specific interventions involved CMAM and IYCF support. Nutrition-sensitive interventions involved seasonal Cash for Training, livestock assistance, improvement of communal wells and rain harvesting, and community hygiene outreach. The project aimed to target 80% of households with a malnourished child with nutrition-sensitive interventions, in nutritional ‘hotspot’ villages. Positive impacts on access to CMAM treatment and IYCF support, livestock (milk production), hygiene practices, and availability of safer water sources were reported. Beneficiaries increased expenditure on food and non-food items, especially agricultural inputs, and reduced use of costly informal credit systems. Ambitious targets on water-borne disease and safe water access were not realized due to underestimated and challenging needs. Households successfully supported to build latrines (n=2500) soon reverted to open defaecation. Only one third of nutritionally vulnerable households were targeted by nutrition sensitive interventions, due to cost limitations. Informed by lessons learned, a follow up project includes more livestock interventions, a Community Led Total Sanitation (CLTS) approach, and an exit strategy to sustain the CMAM programme led by Government.

## Introduction

Pakistan, a lower middle-income country with the sixth largest population in the world, has an exceptionally high level of child undernutrition. Stunting prevalence, at 45%, ranks 124 out of 132 countries; wasting prevalence, at 11%, ranks 106 out of 130 countries. The country is 6th highest out of 185 countries in terms of anaemia prevalence (51.1%)<sup>2</sup>. By contrast, the country is ranked 11th of 118 countries on the hunger index<sup>3</sup>. One of the major contributing factors to the poor nutrition situation is natural disasters; a consequence of climate change, the country has experienced 63 natural disasters from 1935 till 2011<sup>4</sup> (see Figure 1). The frequency of drought affecting the country is increasing, due to a gradual increase in temperatures. Thar desert in Sindh province has been most severely affected, an area covering 25,246 square kilometers with

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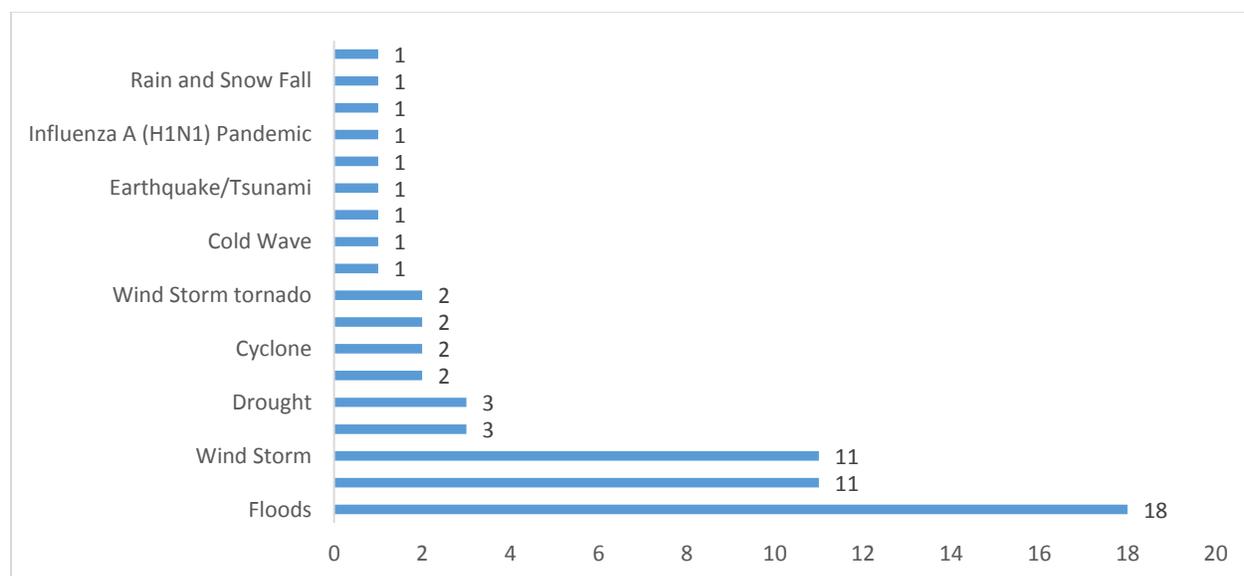
<sup>2</sup> Global Nutrition report-2016.

<sup>3</sup> Global Hunger Index-2016

<sup>4</sup> [www.pakresponse.info/LinkClick.aspx?fileticket=DmiKavwzcm4%3D&tabid](http://www.pakresponse.info/LinkClick.aspx?fileticket=DmiKavwzcm4%3D&tabid).... Data has been gathered for the areas which were included in Pakistan in 1947.

a population of 1,023,000 residing in two districts (Tharparkar and Umerkot.) The area has experienced a severe drought from 2013 till 2015 and recovery interventions are still underway. In Thar desert, 19.1% of children under 5 years and 18.9% of pregnant and lactating women (PLW) are acutely malnourished<sup>5</sup>. Hundreds of children were reported to have died due to malnutrition over the last one and half years. Also, 49% to 59% of livestock (large and small respectively) have died and/or been sold to try and meet immediate family needs<sup>6</sup>. In terms of vulnerability, 68% of the population in the Thar desert area fall under the category of poor and very poor<sup>7</sup>.

**Figure 1: Frequency of natural disasters in Pakistan from 1935 till 2011**



*Information sourced from: [www.pakresponse.info](http://www.pakresponse.info)*

### **Integrated multi-sectoral intervention**

An integrated multi-sectoral project was developed to support nutrition at risk communities in response to the continued drought emergency in Sindh, Pakistan. This project was designed by two Alliance-2015<sup>8</sup> members; Concern Worldwide and Deutsche Welthungerhilfe (WHH), funded by ECHO. The principal project goal was to improve resilience of the drought affected population in Sindh Province. More specifically, the project aimed to meet immediate humanitarian needs of drought affected communities through an integrated Nutrition, Food Security and Livelihoods (FSL) and Water, Sanitation and Hygiene (WASH) response in Umerkot and Tharparkar Districts. Tehsil Umerkot in Umerkot district and Tehsil Chachro in

<sup>5</sup> SMART Survey Report, District Umerkot, January 2016.

<http://reliefweb.int/sites/reliefweb.int/files/resources/smart-survey-report-final-7-3-2016-umerkot-sindh-2.pdf>

<sup>6</sup> Sindh Drought Need Assessment-2015: conducted by Food Security Working Group Pakistan.

<sup>7</sup> Household Economy Analysis (HEA) 2015: jointly conducted by Food security working Group Pakistan and CONCERN/WHH.

<sup>8</sup> <http://alliance2015.org/>

Tharparkar district, were selected as most severely affected by drought with high global acute malnutrition (GAM) prevalence. The project was implemented from May 2015 to August 2016.

A baseline study was conducted in June 2015 and an endline study in August 2016. A mix of quantitative and qualitative methods was used including household interviews, collection of health-related data from government health facilities and focus group discussions (FGDs). For both baseline and endline studies, the sample for household interviews was 409 and nine FGDs were conducted with beneficiaries in nine villages.

The project aimed to reduce the prevalence of acute malnutrition through nutrition-specific interventions (Community based Management of Acute Malnutrition (CMAM) and infant and young child feeding (IYCF) support) combined with nutrition-sensitive actions, that addressed important, interdependent factors, specifically maternal, infant and child care practices<sup>9</sup>; hygiene measures; provision of water infrastructure; access to nutritiously rich and diverse diet and livestock management. Nutrition-sensitive interventions involved:

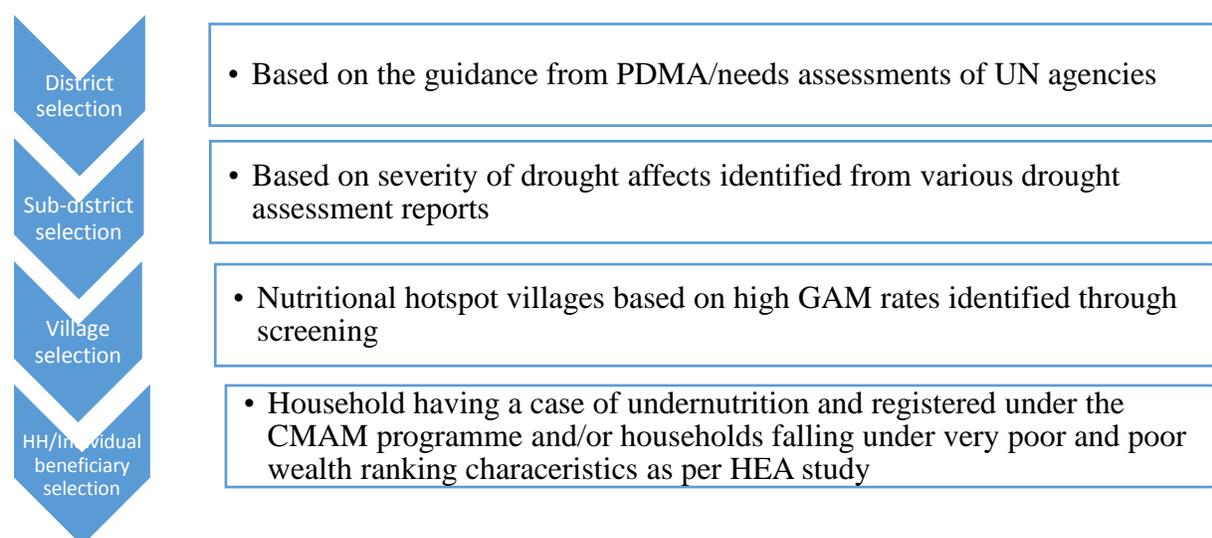
- Provision of cash through Cash for Training (CFT) (nutrition, agriculture and livestock management) to the drought affected *malnourished* households
- Provision of livestock assistance, involving vaccination and deworming, livestock management sessions and clinics with the support of the government livestock department.
- Installation of solar powered water pumping systems on existing communal wells
- Construction of rain harvesting water ponds.
- Hygiene promotion through community outreach workers.

Nutrition-sensitive targeting was largely determined by the nutrition-specific component, whereby households with children enrolled in the CMAM programme were referred to the FSL and WASH services. The project aimed to reach at least 80% of the households out of the nutrition case load in the nutrition ‘hotspots’ and support these households through FSL and WASH interventions (see Figure 2). Geographic targeting within the selected tehsils also followed the nutritional ‘hotspot’ approach. This involved screening of all children (6 – 59 months) to calculate a village GAM prevalence; those with the highest GAM rate were selected for the intervention. The remainder of the FSL and WASH related beneficiaries were identified from the same nutritional ‘hotspot’ villages using the vulnerability criteria guided by the Household Economy Analysis (HEA) study (i.e. very poor and poor households on wealth ranking). Integrated indicators were designed for the project (see Table 1).

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<sup>9</sup> IYCF activities were mainly nutrition specific, however, some IYCF messages were also covered by nutrition sensitive actions.

**Figure 2: Nutrition sensitive geographic targeting process**



**Table 1: Project indicators**

Component	Indicators
<b>Nutrition specific</b>	<ol style="list-style-type: none"> <li>1. Percent of children with SAM having access to appropriate treatment including therapeutic food</li> <li>2. Percent of children (0-5 months of age) who are fed exclusively with breastmilk</li> </ol>
<b>Nutrition sensitive</b>	<ol style="list-style-type: none"> <li>3. Percent of the target population achieves Acceptable Food Consumption Score (FCS) (within last 7 days)</li> <li>4. The proportion of households in the highest Coping Strategy Index score category has been reduced (Reduced CSI)</li> <li>5. Prevalence of water-borne and water-related diseases in targeted population</li> </ol>

### Implementation process and impact of the project

#### *CMAM/IYCF programme*

Concern Worldwide implemented a nutrition specific response, targeting children under five years and pregnant and lactating women (PLW), involving CMAM service set up, community mobilisation for uptake of health and nutrition services, and behaviour change communication for improved IYCF and care practices. Quality treatment was provided to severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) cases and moderately

malnourished PLW, at the community level, through mobile teams. SAM children with complications were treated in the stabilisation centres (SCs) established with the support of Concern Worldwide in the district headquarter hospitals. Orientation sessions (one to one and in groups) were held for mothers of malnourished children, caregivers, PLW and other women, on topics such as breastfeeding, complementary feeding, ante- and post-natal care and personal hygiene. Breastfeeding corners were established at each CMAM static site for privacy and to provide mothers with counseling on IYCF related issues. Mother Support Groups were also formed in each Union Council, comprising of 8 – 10 women. These women were trained on screening of children and PLW and delivery of key messages on nutrition, FSL and WASH issues to women of their areas. During the project life, 61,693 children under 5 years and 27,494 PLW were screened. A total of 6,071 SAM cases, 11,395 MAM children and 9,201 malnourished PLW were treated in the CMAM programme.

### ***Food Security and Livelihood (FSL) Programme***

Food security and livelihoods related interventions were designed to increase access of the targeted beneficiaries to adequate and diversified food through appropriate activities. The main activities under FSL component were cash transfer programming and livestock assistance.

### **Cash for Training (CfT)**

CfT targeted drought affected malnourished households (referred from the nutrition programme), PLW and the most vulnerable people (those with disabilities and older people). It was designed to cover the extreme lean periods (Sept to Nov and March to August) when daytime temperatures can reach 50 degree Celsius. The cash assistance was conditional on attending awareness sessions that delivered nutrition sensitive key messages on nutrition, livestock and agriculture management; these focused on critical behaviours identified through a baseline Knowledge Attitude and Practices (KAP) survey (see Table 2). Each selected beneficiary received two days training on nutrition sensitive messages followed by cash disbursement PKR 6000 (54 euro) per cycle through electronic mobile payment (Jazz Cash). There were three cycles, so each beneficiary received a total amount of PKR 18000 (162 euro) . The cash amount was calculated based on the WFP food basket value for Pakistan. Cash disbursement was conducted in clusters near to the beneficiaries’ household, given poor roads and transport facilities. The training time and duration was flexible in consideration of the target groups.

**Table 2: Nutrition sensitive messages by sector**

<b>Topics</b>	<b>Key messages</b>
Nutrition	<ul style="list-style-type: none"> <li>• What is nutrition and malnutrition (pictorial examples), anthropometric measurement (MUAC), importance of nutrition for human body growth.</li> <li>• Different types of nutrients and their role in growth (showing pictures of different food items containing major nutrients)</li> <li>• Sources of nutrients (vegetables, fruits, dry fruits, fish, lentils, etc.)</li> <li>• Importance of hand washing, when, how to do hand washing (illustrated pictures), importance of water in personal hygiene</li> <li>• How food and water become contaminated and how to keep them safe from contamination.</li> </ul>

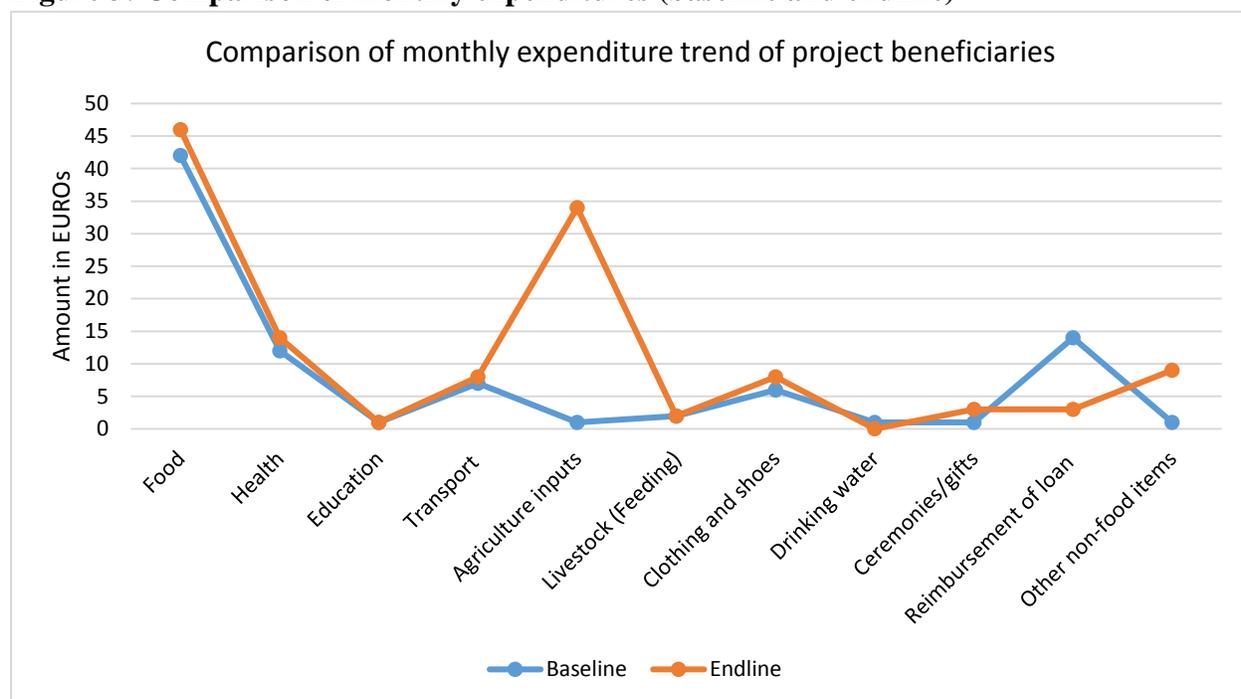
	<ul style="list-style-type: none"> <li>• Food items for PLW and children, importance of breastfeeding, especially newborn infant</li> <li>• What are water-borne diseases, water treatment methods/ techniques at local level and its benefits</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>• Seasons (Kharif, Rabi) and crops/vegetables which are mainly grown in Tharparkar region, seasonal calendar.</li> <li>• Diversified food options, e.g. Bajra (millet) production and utilisation.</li> <li>• Kitchen gardening: simple methods on how to grow certain vegetables at home in pots, what are the wild foods naturally grown in the area (mushrooms, water melons, etc. How to tend to vegetables and their nutritional value.</li> </ul>
Livestock	<ul style="list-style-type: none"> <li>• Types of livestock, feeds, fodder, and natural pastures available in drought areas (illustrated by pictures)</li> <li>• Importance of livestock for nutrition (milk), livestock space (open grazing), shade (protection from direct sun), watering, local livestock diseases</li> <li>• Vaccination and deworming calendar (calendar in local language dispatched in community for future reference), livestock feed management at local level</li> <li>• Formulation of nutritive feeds from local available resources for livestock</li> </ul>

The baseline study found that on average, beneficiaries were spending 88 euro on all monthly household expenses, including food, non-food and other expenses. At endline, monthly household expenditure was 128 euro, a rise of 40 euro which is attributed to the cash assistance. Trend analysis shows that beneficiaries increased expenditures on food, health, agriculture inputs, clothing and other non-food items. The major area of increased expenditure was buying agricultural inputs for the up-coming cropping season while there was a considerable reduction in loans repayment; this suggests that those receiving cash switched to cash purchase in favour of the traditional structural credit system<sup>10</sup> (see Figure 3). A total of 15,288 female individuals (PLW/ child caregivers) were covered under this activity; males accounted for 6% (n=908) of beneficiaries.

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<sup>10</sup> A traditional conventional credit system prevails in the area which communities use to get food and non-food items/or cash for household expenditure. It commands a high interest rate and whenever they need a new loan (cash or in kind), they must adjust the existing loan.

**Figure 3: Comparison of monthly expenditures (baseline and endline)**



#### Livestock vaccination and de-worming

In Tharparkar and Umerkot, most household livelihoods depend on rearing livestock (mainly small livestock). Heightened disease prevalence in drought conditions results in livestock mortality or weaker animals, for which there is a lower net return compared to healthy animals. To improve livestock immunity and good animal health, vaccination and deworming activities were planned with the support of the government livestock department for all the targeted households in the area. Vaccination/de-worming campaigns were organized at each village level where all small livestock (goats/sheep) and large livestock (cattle) were assisted. The livestock of surrounding villages and communities were also covered, to avoid any disease outbreak that may affect the project targeted areas. A total of 125,957 animals (102,468 small and 23489 large) were reached through this activity. Beneficiaries reported positive impact on their livestock due to the vaccination/de-worming assistance: 100% of beneficiaries mentioned increase in milk production.

#### ***Water, sanitation and hygiene (WASH)***

The WASH component involved both household and communal interventions for the population covered by the nutrition component.

#### Access to drinking water

Communal and household level schemes were designed to improve community access to drinking water. In some villages, mostly females were responsible for collecting water from deep dug-wells (around 300ft) by pulling ropes in groups or using animals (donkey, camel). This laborious task, as well as distance to the dug-wells, was creating health hazards for women, especially PLW. Thus, solar water pumping machines were installed on a total of 12 dug-wells. An additional 100 villages were identified from the hotspots for rehabilitation of depression

sites<sup>11</sup>. Local villagers were engaged in the rehabilitation work through Cash for Work. The project also assisted 1350 households from the same villages who had SAM cases, for construction of household underground water tanks. This tank was dual purpose; household water storage and to harvest rainwater during rains.

Endline review found that on average, a household collected four litres of water for drinking, three litres for cooking and seven litres for washing, an overall increase of 4.5 litres from baseline. In terms of water sources, more than half of the respondent households utilize wells without solar pumps in both districts and 22% use hand pumps, mainly in Umerkot. More than 90% of the sampled households believe that it is safe to collect water from these points or sources. All the households have containers to store and fetch water, with each household having at least three containers (as at baseline); improvements were seen at endline regarding cleaning the containers.

#### Hygiene promotion

Hygiene promotion was integrated into all project awareness sessions. Key messages included critical times and appropriate methods for hand washing, personal and household hygiene and water treatment at household level. Hygiene promotion campaigns, celebration of WASH related days, hygiene promotion activities in schools, and hygiene promotion messages through trained Community Outreach Workers were some of the main approaches adopted to improve behaviours. In total, 34,500 families were reached through the hygiene promotion component.

At endline, 11% of households reported washing their hands during all five critical times (compared to none at baseline), of whom 44% used soap and the remainder used local sand and water. At baseline, 95% of targeted beneficiaries had no latrines; at endline, 28% had latrines and were using them. Most (97%) realised the importance of latrines and the health hazards of open defecation.

#### Construction of low-cost latrines

The baseline study found that around 28% of the population had pit latrines in use. A total of 2500 families were identified from the nutritional hotspot villages who did not have latrines and were defecating in the open. These families were supported for construction of low-cost latrines; latrine construction material was provided while they contributed voluntary labour. Despite this assistance and sensitization on the importance of latrine use, the trend of using latrines has not improved as much as anticipated. Although all 2500 households constructed latrines and initially used them, they reverted to open defecation.

#### **Coordination mechanism**

The coordination mechanism for the project was developed at national, provincial and district levels. Existing Nutrition Working Groups (chaired by UNICEF, under the MoH) and Food Security Working Groups (chaired by FAO and WFO, under the Ministry of National Food Security and Research) at national and provincial levels were on board from project design until end. Project progress was continuously shared with the working groups through a 4W (who, what, where and when) matrix and other reporting mechanisms. In addition, the Pakistan

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<sup>11</sup> Depression sites are natural places where rain water gathers from the surrounding sand dunes. The land of that site is a bit compressed due to which water holding capacity is increased. The rain water stands for bit long period at this site. Locally it is called as *Tarai* (which means depression site).

Humanitarian Forum (PHF)<sup>12</sup>, the Provincial Disaster Management Authority Sindh (PDMA<sup>13</sup>) and Sindh Nutrition Cell<sup>14</sup> were kept closely informed. The active coordination hub for the project implementation was at district level; district level coordination is led by District Commissioners who leads all the Government departments, including interventions of NGOs and civil society. Formal Memoranda of Understanding (MoU) were signed with district livestock and health departments to ensure close coordination and engagement in the project implementation process. Regular coordination meetings were held with the relevant district departments and formal project monthly progress reports were submitted.

Project tasks were distributed among three local partner non-governmental organisations (NGOs); one NGO took a lead on the nutrition specific component and two delivered the nutrition sensitive component. A coordination mechanism was developed at field level comprising of project management and technical staff of the partner NGOs and Concern Worldwide and DWHH field teams. Regular monthly meetings helped address operational issues on the ground. Field visits of the ECHO country team and experts from regional and head office also provided guidance and assistance on the emerging needs within the project.

### Results/impact of the project

Endline review of project indicators indicates the project exceeded targets for indicators relating to SAM treatment, exclusive breastfeeding, Food Consumption Score (FCS), and household poverty ranking (see Table 5). While prevalence of water borne illness at baseline (<22%) was already below the target value (<50%), it increased during the life of the project.

**Table 3: Achievements of the projects against set indicators**

Indicator	Target value	Baseline value	Final Progress value
% of children with SAM having access to appropriate treatment including therapeutic food	>50% (Sphere standards)	0%	55%
% of children (0-5 months of age) who are fed exclusively with breast milk	65%	36%	75%
% of the target population achieves Acceptable Food Consumption Score (FCS)	38%	0%	58%
The proportion of households in the highest Coping Strategy Index score category has been reduced (Reduced CSI)	20%	34%	59%
Prevalence of water-borne and water-related diseases in targeted population	<50% population report	<22% of population report	<27% of population report

<sup>12</sup> PHF is the coordination forum comprising of all the Humanitarian INGOs working in Pakistan.

<sup>13</sup> PDMA is a Government body which takes lead on all the disaster/humanitarian related work in the province.

<sup>14</sup> The Cell is led by Department of Health, Government of Sindh and UNICEF.

## **Lessons learned**

***Integrated multisector nutrition sensitive programming to address the issues of malnutrition.*** Although many interventions have been implemented in the targeted area to address the drought situation, all were ‘nutrition-blind’ with no nutrition objectives. This was the first integrated multi-sectoral intervention to respond to the current drought situation. The successful implementation and the results of the intervention indicate that multi-sectoral interventions with a nutritional lens are an appropriate and effective way to tackle the drought situation, quickly achieving results on factors associated with under nutrition in Pakistan. A SMART survey has just been completed in the area (June 2017) and is under analysis.

***Strong coordination among relevant stakeholders (UNICEF, WFP, Nutrition Cell, Government line departments, local NGO partners etc.).*** The coordination, activism and support from the Government reflected the commitment of the state towards tackling undernutrition issues in the drought affected areas of the country. There was active involvement of many stakeholders, including UNICEF, WFP, Provincial Nutrition Cell, Government line departments and international and local NGO partners. Well designed and hierarchical coordination from national to district level with Government departments and other stakeholders contributed to the effectiveness of the intervention.

***Pooling different expertise of humanitarian sector brings drastic results.*** The nutrition specific and nutrition sensitive activities were implemented by different local partners, playing to their respective strengths. There was good collaboration: partners who implemented the nutrition specific interventions were responsible for identifying nutritional hotspot communities and beneficiaries to the nutrition-sensitive partners.

***Synergies of the project with other interventions in the area.*** WHH and Concern Worldwide have other long running interventions in the area that aim to build resilience of the communities, whilst responding to the emergency situation. Synergies were developed between the humanitarian and development programmes: for example, long term WHH nutrition sensitive programmes funded by Germany were also covered by the CMAM and nutrition-sensitive programmes.

Although the project achieved its intended results, some of the project areas were not as successful as anticipated. Some of those areas are elaborated below:

***Imbalance between nutrition specific and nutrition sensitive interventions.*** There was 100% coverage of nutrition-specific interventions, however, only 32% of the nutrition-specific beneficiaries were covered by the nutrition-sensitive component. This was due to cost; nutrition specific components cost 1.6 euro per beneficiary whereas 10.3 euro were spent per beneficiary for nutrition sensitive interventions<sup>15</sup>. This suggests that nutrition sensitive interventions need greater investment to ensure reach.

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<sup>15</sup> The cost per beneficiary has been calculated by distributing the whole budget “programme + administrative” per sector into the covered total number of beneficiaries.

***Reduction in open defecation practices.*** It was planned to tackle open defecation practices through hygiene promotion and latrines construction. However, increasing awareness of the health hazards of open defecation and latrine construction yielded poor results. Changing ingrained behaviours requires a long term strategy that is difficult to realise within a short term emergency project.

***Prevalence of water-borne and water-related diseases in targeted population.*** This was the first multi-sectoral intervention by WHH and CONCERN, which ambitiously aimed to reduce water related disease prevalence in the target population. However, the field realities were not fully appreciated at the time of intervention design and baseline. The water shortage in the area, and due to this, utilization of turbid and contaminated water (as the only source) continued throughout the implementation period. Project scope was limited by resources, so that the extensive water related needs of all populations could not be catered for.

The main enabling factors which contributed to smooth implementation of the project were:

- Donor commitment to address recurrent drought and malnutrition
- Local human resource pool (qualified local staff for project implementation were available in the area
- Presence of relevant Government line departments at grass root level, with active participation and interest of district administration in the project
- Interest of Provincial Government in nutrition issues
- Sensitivity to, and involvement of, the community; the project was designed to address immediate needs of the communities
- Supportive social and cultural norms; Muslim and Hindu communities are equally represented in the area and welcomed the intervention irrespective of diverse norms and religions.
- Streamlined procurement regulations to enable easier procurement by partners.

The main constraints faced by the project related to weather, access and the short project duration. Extreme weather conditions (high temperatures), poor communication infrastructure (no proper link roads) and difficult, costly and time-consuming transportation were major hindrances that project staff faced. Establishing a new multi-sectoral intervention within a short time frame was challenging; a quarter of the project time was taken up with inception and preparation.

## **Conclusion**

Within a short timeframe, a multi-sectoral project, involving nutrition-specific and nutrition-sensitive interventions and cross-sectoral coordination, was successfully established in a drought-affected community and achieved impact. As this project was funded by ECHO for the short term (emergency response funding), Concern Worldwide and WHH planned to mobilize more funding to maintain the response with a view to reducing undernutrition prevalence to below emergency thresholds. At the end of the project term, Concern Worldwide continued the nutrition specific (i.e. CMAM) component, pending development of a follow-up project (the nutrition sensitive component was not extended). This helped to stabilise the undernutrition situation in the area by avoiding a break in service. A one year follow up project has been designed and informed by lessons learned, which has since been approved for ECHO funding. New elements include:

Scale up of the livestock assistance component; the first project only involved de-worming, livestock vaccination and treatment. Engaging the Government livestock department, has been added.

Given the poor return on the household latrines intervention, this component has been dropped from the next phase. Instead, a CLTS approach has been added to galvanise communities on the issue of open defecation along with awareness raising and sensitisation. To complement this, a pool of outreach workers for hygiene promotion will be deployed in all targeted villages.

A clearer exit strategy has been formulated; the CMAM programme will be continued by Government through one of their World Bank funded nutrition programmes, on completion of the ECHO funded phase.

For more information, contact: Ali Dino Kunbher, email: [Ali.dino@welthungerhilfe.de](mailto:Ali.dino@welthungerhilfe.de)