PROGRAM BOOK

THE FIRST INTERNATIONAL CONFERENCE ON

CHILD NUTRITION & MAN-MADE CRISIS

_________________________ 6 - 8 December 2016 ___________________

Ahfad University for Women
Omdurman – Sudan

www.ahfad.edu.sd/healthsciences/index.php/conferences
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Welcome Note

On behalf of the Organizing Committee, am delighted to welcome you to the International Conference on “Child Nutrition and Man-made Crisis”.

I would like to note that this conference is part of the celebration of the 50 anniversary of Ahfad University for women to demonstrate Ahfad outreach capability and involvement with community concerns.

As you know, natural and man-made disasters can put children’s health and development at risk for years to come. Disasters touch the lives of millions of children every year, and children are especially vulnerable to the after effects.

Over the past two decades, momentum around formulation of policies on child nutrition and emphasis on helping children has been steadily building with governments and stakeholders around the world acknowledging nutrition as key component of human development. In the Sudan, the National Nutrition Policy and strategies emphasizes the importance of improving nutrition practices of infants and children to prevent malnutrition among under five children and ensuring healthy life and growth of Sudanese children.

This conference is our attempt to bring together some of the national and International experts who through their endeavors have made a significant contribution to nutrition policies across the globe. The conference will feature some nutrition situation of children under normal and man-made crisis with a well balanced view from government, regulatory, international agencies, and research and industry perspectives. We will feature themes related to food security, nutrition of vulnerable groups, children under stress, experiences and practices of NGOs and international agencies working on nutrition in crisis zones to also be highlighted.

I would like to give special thanks to the members of the Organizing Committees, individuals and organizations who have helped us to put the program together. I would also like to extend my gratitude to our valued sponsors for helping us making this conference successful.

Special thanks to the president of the Ahfad University and the administration of the various schools and units who helped us in the organization of this conference. Regards

Prof. Sidiga Washi
Chairperson
Conference Program

Opening Program
Monday 5th of December 2016
Mahmoud Hag ElSheikh Hall - Ahfad University for Women

07:00-07:05 pm Quran

07:05-07:10 pm Film Show

07:10-07:15 pm Welcome Speech
- Prof. Sidiga Washi, Chair Person, Organizing Committee

07:15-08:15 pm Speeches:
- Dr. Manal Abdeen Director of Nutrition & Health Center for Training & Research
- Prof. Gasim Badri, President of Ahfad University for Women (AUW)
- Her Excellency Dr. Somia Okoued, State Minister of Health, Federal Ministry of Health
- Her Excellency Dr. Sommya Abu Kashwa, Minister of Higher Education & Scientific Research

08:15 pm Official Opening of Exhibitions
Dinner + AUW Choral
## Day 1: Tuesday 6th of December 2016

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<thead>
<tr>
<th>Time</th>
<th>Title Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:30-9:30 am</td>
<td><strong>Registration</strong></td>
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<tr>
<td><strong>Opening Session</strong></td>
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<tr>
<td>9:30-10:00 am</td>
<td><strong>Keynote Speech:</strong> Acute and Chronic Childhood Malnutrition among Children: some of the African Countries as an example.</td>
<td>Prof. Pieter Dagnelie, Netherlands</td>
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<tr>
<td>10:00-10:30 am</td>
<td><strong>Keynote Speech:</strong> Risk and Returns: Household Priorities for Resilient Livelihoods in the Darfur Region</td>
<td>Prof. Merry Colleen Fitzpatrick, USA</td>
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<td>10:30-11:00 am</td>
<td><strong>Keynote Speech:</strong> Role of WHO</td>
<td>Dr. Maha El Adawy, WHO, Regional office Cairo</td>
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<td>11:00-11:30 am</td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td>11:30-12:30 pm</td>
<td><strong>Symposium 1</strong> Chairperson: Prof. Mohamed Osman Swar, Dean School of Medicine, AUW. Rapporteur: Uz. Hanadi Elkhaim &amp; Dr. Huda Sarfi</td>
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<td></td>
<td>1. Promotion of Local Peoples Traditional Knowledge to Secure their Food in Drought Prone Areas</td>
<td>Prof. Omar Mohamed Salih, National Food Research Center</td>
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<td>2. An Overview of Food Security in War Affected Areas in Kassala State</td>
<td>Dr. Sarra Rasheid Beheiry School of REED (AUW)</td>
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<td>3. Nutrition and Health status of children in war affected areas in eastern Sudan</td>
<td>Uz. Wafa Mohamed Ahmed Elbadawi School of Health Sciences (AUW)</td>
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<td>4. Role of Building Resilience on Food Security for Child Nutrition Status in Darfur State</td>
<td>Uz. Wafaa Badwi A/Allah Federal Ministry of Health</td>
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<td>5. From Traditional Healing Practices to Therapeutic Feeding Programs among Wasted Children &lt;5: Three Examples from IDPs Camps in Darfur Region</td>
<td>Prof. Mohamed Z. Ali School of Health Sciences (AUW)</td>
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<tr>
<td>12:30-1:00 pm</td>
<td><strong>Discussion</strong></td>
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<td>1:00 -2:00 pm</td>
<td><strong>Lunch Break</strong></td>
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<td><strong>Symposium 2</strong> Chairperson: Prof. AlGasim Ali AlGasim, Director of National Food Research Center Rapporteur: Uz. Nuha Tambal &amp; Uz. Nameit</td>
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<tr>
<td>2:00–4:00 pm</td>
<td>1. The Role of School Feeding Program Supported by DAL Company in Students Enrollment and Drop-out</td>
<td>Dr. Hind Bushra Ahmed Ibrahim, School of REED (AUW)</td>
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<tr>
<td></td>
<td>2. Water Supply, Sanitation and Hygiene Status in Kassala</td>
<td>Dr. Randa Hamza</td>
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</tbody>
</table>
3. Provision of key Messages on Dietary Practices of Vulnerable Beneficiaries, Bindizi locality, Central Darfur State  
   Prof. Sidiga Washi, QAIA (AUW)

4. Prevalence of Anaemia, Vitamin A, Zinc and Copper Deficiencies among Adolescents in South Darfur State Sudan  
   Dr. Umsalama Eidam, Nyala University

5. Community Based Management of Acute Malnutrition (CMAM)  
   Dr. Elamin Osman Sidahmed, National University

6. Children under Nutritional Stresses in War Torn Countries  
   Dr. Huda Ibrahim A. Kambal, (MOH)

7. Assessment of Knowledge, Attitudes and Practices of Mothers toward Infant and Young Child Feeding at Omdurman Maternity Hospital (Aldayat)  
   Uz. Marwa Abd Alkream Ahmed Ibrahim (AUW)

4:00-4:30 pm Discussion

4:30-5:00 pm Coffee Break

### Day 2: Wednesday 7th of December 2016

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<thead>
<tr>
<th>Time</th>
<th>Title Topic</th>
<th>Speaker</th>
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</table>
| 9:00-10:30 am| Symposium 3 Chairperson: Prof. Pieter Dagnelie  
2. Gum Arabic in the Sudan a Sustainable Food Resource  
3. Wasting and Stunting in Preschool Children and the factors affecting -Case Study  
4. The Effect of Household Food Security on Nutritional Status of Pre-school Children (A Case Study of Umbada, Omdurman, Sudan)  
5. Supporting Food and nutrition security in Sudan through soybean processing (UNIDO project)  
6. Child Nutrition and Man-made Crisis  
7. Knowledge, Attitudes and Practices towards Infant Feeding in Kadugli Region  
8. Experience of Samil Industrial | Uz. Sawsan Ahmed Mohammed Balla, (AUW)  
Dr. Abdelmagid Abdelgader, Gum Arabic Board  
Uz. Rasha Mahgoub Ahmed Fahmi, University of Behri  
Dr. Zubeida Mohammed Elsayed, National Center for Research and Industrial Consultancies  
Uz. Nada Eltayeb Nutrition Manager, Almanar Voluntary Organization  
Uz. Eman Dulman (AUW)  
Uz. Eman Ahmed A/ Kareem |
| 10:30-11:00 am| Discussion                                                                 |                                                                     |
| 11:00-11:30 am| Coffee Break                                                              |                                                                     |
| Symposium 4 | Chairperson: Prof. Merry Colleen Fitzpatrick  
Rapporteur: Dr. Ahlam Gorafi & Uz. Nuha Taha |
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<tr>
<td><strong>11:00-12:30 pm</strong></td>
<td><strong>Title Topic</strong></td>
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<tr>
<td><strong>1.</strong></td>
<td>Role of UNICEF in Children Nutrition</td>
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<td><strong>2.</strong></td>
<td>Infant and Young Child Feeding and Weaning Practices among Mothers in Northern Kordofan State</td>
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<tr>
<td><strong>3.</strong></td>
<td>The Right Quality, Empowerment and Inclusiveness for Education: The Case of Special Groups</td>
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<td><strong>4.</strong></td>
<td>Life Saving and Life Enhancing Nutrition Intervention Experience from World Vision International Sudan Country Program</td>
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<td><strong>5.</strong></td>
<td>Contribution of Sudanese Traditional Foods to Food Security of Vulnerable Groups</td>
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<td><strong>6.</strong></td>
<td>Experience and Practice of Child Friendly Centers Khartoum State</td>
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<tr>
<td><strong>7.</strong></td>
<td>Ethical issues for food security and child nutrition</td>
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<td><strong>8.</strong></td>
<td>Effectiveness of Ready-to-Use Therapeutic Foods (RUTFs) used for Dietary Treatment of Children Suffering from Severe Acute Malnutrition in Dilling Locality- South Kordofan</td>
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<tr>
<td><strong>12:30-1:00 pm</strong></td>
<td><strong>Discussion</strong></td>
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**Lunch Break**

| Symposium 5 | Chairperson: Prof. Mohamed Ali Eltoum  
Rapporteur: Uz. Hanadi Elkhatim Uz. Nuha Tambal |
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<tr>
<td><strong>2:00-3:00 pm</strong></td>
<td><strong>Title Topic</strong></td>
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<tr>
<td><strong>1.</strong></td>
<td>Impacts of Feeding and Traditional Practices on Nutritional Status of Children (6 months to &lt;2 years) in Geneina Town, West Darfur State, Sudan</td>
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<tr>
<td><strong>2.</strong></td>
<td>Management of Severe Malnutrition in Children in Emergency Situations: a Community-based Management Trial, case of Darfur, Sudan</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>Evaluation of nutritional status of Under Five Years Children Suffering from Protein Energy Malnutrition in Omdurman Pediatric Hospital</td>
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<tr>
<td><strong>4.</strong></td>
<td>Knowledge and Practice Towards Home Management of Children Under Five Years of Age with Diarrhea in Eldamazein Teaching Hospital</td>
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<tr>
<td><strong>5.</strong></td>
<td>Assessment of Nutrition Status for Children with Physical Disabilities Affecting Food Intake, Aged (2-5) Years in Khartoum Cheshire Home (KCH)</td>
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<td><strong>6.</strong></td>
<td>Traditional Healing Practices to Therapeutic Feeding Programs among Wasted Children (&lt;5): Three Examples from IDPs Camps in Darfur Region</td>
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<tr>
<td><strong>12:30-1:00 pm</strong></td>
<td><strong>Discussion</strong></td>
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**Presentation of Graduates Abstracts Slid Show**

**3:00-4:00 pm** | **Closing Ceremony**

**4:30-5:00 pm** | **Coffee Break**
## Students’ Day

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>09:00-9:30 am</td>
<td>Registration</td>
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<td>9:30-10:00 am</td>
<td>Opening Session</td>
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<tr>
<td>9:30-10:00 am</td>
<td>Group discussion with Students</td>
<td>Prof. Pieter Dagnelie, Netherlands</td>
</tr>
<tr>
<td>10:00-10:30 am</td>
<td>Group discussion with Students</td>
<td>Dr. Merry Colleen Fitzpatrick, US</td>
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<tr>
<td>10:30-11:00 am</td>
<td>Discussion</td>
<td></td>
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<tr>
<td>11:00-11:30 am</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>11:30-01:00 pm</td>
<td>Nutrition Management during Crisis (Darfour)</td>
<td>Isra Ismail Ibrahim &amp; Sara Elyas</td>
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<td>Nutrition Management during Crisis (South Kordofan)</td>
<td>Hager Ismail Fadel/Allah</td>
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<td>Successful Story</td>
<td>Eman Dulman</td>
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<td>Presentation of Graduates (AUW) Abstracts</td>
<td>Show</td>
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<tr>
<td>01:00-02:00 pm</td>
<td>Debates Session AUW with Sudan University of Science and Technology</td>
<td>Coordinator: Uz. Amani Tabidi</td>
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Nutrition & Health Center (NHCTR)

VISION
NHCTR was established in January, 2001 with a clear vision of developing the field of nutrition and nutritionist in the country. The centre was approved by the University Academic Council to be affiliated to the School of Health Sciences. The centre was established in response to the growing need of the university and the country at large, to address Health and Nutrition issues in the Sudanese Communities.

Training goals
Development of sustained institutional training capacity as well as human and financial resources, necessary for implementation of national nutrition programs.
Development of quality training programs those cater to the numerical needs of personnel who have the necessary skills and competencies to implement national nutrition programs.

Research goals
- Developing of a cadre of professionals capable of conducting independent research and of training the next generation of professionals: academics, policy makers and researchers.
- Strengthening local capacity in Sudan to respond to nutrition research needs.
- Increasing the proportion of research in nutrition that is conducted by national or regional researchers.
- Increasing the level of input of researchers within the country in the definition of their countries’ research priorities.

Objectives
- To prepare quality and adequate numbers of national nutrition cadre and motivated professionals.
- To bridge the gap of inadequacies of human resources responsible for the planning, implementation, and evaluation of nutrition programs.
- To link the nutrition training and nutrition research to program operations.
- To provide training programs with targeted approach to the problem of malnutrition and capable of making a tangible difference at national level.
Key Speakers

Prof. Pieter C. Dagnelie

Strategic professor of Nutritional Epidemiology. Studied human nutrition at Wageningen University and received his PhD in 1988 based on a population-based, mixed-longitudinal cohort study of the nutritional status and growth of children fed macrobiotic diets. Subsequently, he received fellowships from the Dutch Cancer Society (1989) and the Royal Netherlands Academy of Arts and Sciences (1991) to work on the aetiology of weight loss in cancer patients, using advanced technologies such as Magnetic Resonance Spectroscopy and Stable Isotope Tracers as main research tools. Pieter’s current research interests are in both Public Health Nutrition and Clinical Nutrition. He has performed and supervised numerous observational studies and randomised clinical trials on the role of nutrition and bioactive compounds in the prevention and treatment of chronic diseases and the improvement of transmural health care. In the problem-based learning system at Maastricht University, Pieter has fulfilled a number of senior roles in the Epidemiology master (Writing a research protocol, intervention research, applied epidemiology and meta-analysis) and has been internship coordinator for this master from 2004-2010. He is former member of the Scientific Committee of Maastricht University Medical Centre and the Medical Ethical Committee of Maastricht University Medical Centre, and currently member of the Management Team of two large prospective cohort studies: the Maastricht Study and the KOALA Birth Cohort Study.

Merry Fitzpatrick

Merry is currently conducting independent research on the causes of kwashiorkor malnutrition, in eastern Democratic Republic of the Congo. This is a type of malnutrition that is often fatal and is common in many conflict-affected areas of central Africa. Merry brings more than 20 years of field experience in humanitarian response, primarily in food security and livelihoods to her research. She has worked with multiple humanitarian agencies, including the International Rescue Committee, GOAL Ireland, and Food for the Hungry. Most recently, at World Concern she was the Relief Director and then the Senior Director for Technical Support. With Feinstein she conducted research on the Somalia famine, resilience and livelihoods in Darfur, Sudan, and pastoralism. Additionally, she was the international research team leader on the Feinstein Center's Sudan Humanitarian Assistance and Resilience Program (SHARP). She is a Ph.D. candidate Tufts University Friedman School of Nutrition Science and Policy and expects to graduate in 2017.

Dr Maha El-Adawy

Has been appointed Director, Division of Health Protection and Promotion, 17 July 2016. She is EX. Representative of the United Nations Population Fund (UNFPA) in the Islamic Republic of Iran from July 2015 until August 2016. Programme and Technical Regional Advisor, Sexual Reproductive Health and Rights in UNFPA Regional Office in Cairo, Egypt from January 2009 to August 2015. Ex Policy Adviser for Health at the United Nations Development programme office in New York, from June 2007 to December 2008. Dr El-Adawy Ex. Senior Regional Reproductive Health and Reproductive Rights Program Officer at the Ford Foundation, New York, March 2000 until June 2007. Ex. positions at the European Commission Delegation in Cairo. Egypt Harvard School of Public Health, Boston, USA. Dr El-Adawy has Bachelor of Medicine and Surgery, Faculty of Medicine, Cairo University, Egypt. She also holds a Master’s degree in Public Health Cairo University, Egypt. Dr El-Adawy has Master’s degree of Public Health in Maternal and Child Health from Harvard School of Public Health, Boston, USA, as well as a Doctorate degree in Public
Health, Cairo University, Egypt. Eisenhower fellowship for leadership development from the Eisenhower Fellowship program, Philadelphia, USA

Abstracts

Gum Arabic in the Sudan a Sustainable Food Resource
Dr. Abdelmagid Abdelgader
Secretary General - Gum Arabic Board “SUDAN”

Gum Arabic is the exudate produced by two major trees, Acacia Senegal and Acacia Seyal, in addition to 30 other Acacia trees, which, all, comprise the so called Gum Arabic Belt in the Sudan. Gum Arabic trees throughout the gum Arabic belt depend completely on rain with no supplementary irrigation. The rainy season is limited to the months June – September. Also the trees do not receive any fertilizer form of chemicals or (insecticides) pesticides.

The trees and their product are 100% organic, representing suitable environment to host over 90% of Sudan animal population (around 130 million animals: Sheep, Cattles, and Camels). The Belt provides 60% of the natural forage for these animals. Thirteen millions are making their living in the gum Arabic belt in twelve states and 5million are directly involved in forestry activities, such as Gum picking, gum collection, charcoal and firewood collection.

Accordingly, the gum Arabic Belt will continue to be the main important supplier of water and a place for food security. It is a strategic location for food security to the Arab and African Countries.

One direct way in which forests and trees contribute to food security is through provision of diets and nutrition. Forest foods wild life is sharing land with different crops of sorghum, fruits, roots, tubers, seeds, nuts, gums, and forest animals and their products, such as eggs and honey supplement the foods produced by agriculture and obtained from other sources. Forest foods can assist in coping with seasonal food shortages due to extreme weather conditions, natural disasters, human made conflicts and other shocks.

Life Saving and Life Enhancing nutrition Intervention Experience from World Vision International Sudan Country Program
Afaf Ibrahim Fadl,
World Vision International/Sudan Program, Operations, Health and Nutrition Officer

At World Vision, we envisage a world where every child has the opportunity for life in all its fullness. Good nutrition is an essential foundation for health and development, yet malnutrition continues to be the world’s most serious health problem and the single-biggest contributor to child mortality. As the largest private humanitarian organization, World Vision has made the quest of addressing malnutrition as a top priority.

In Dec 2015, UNOCHA reported 2 million children in Sudan who suffered from Global Acute Malnutrition (GAM) annually. South Darfur is one of 5 states that carry half (51%) the national Sever Acute Malnutrition SAM burden. The most recent Nutrition survey (2013 S3M) showed that South Darfur has an average GAM rate of 18.3% (excluding the capital) and SAM rate of 3.6%; both of which are above WHO emergency thresholds of 15% and 2%; respectively. In order to reduce
morbidity and mortality from malnutrition, World Vision is implementing Community Management of Acute Malnutrition approach to address the problem. Data collected from World Vision Community Based Management of Acute Malnutrition (CMAM) program in South Darfur and Blue Nile State from October 2015 through September 2016 are summarized here, with the goal to contribute to the reduction of morbidity and mortality, associated with malnutrition in Sudan.

**Evaluation of Nutritional Status of Under Five Years Children Suffering from Protein Energy Malnutrition (PEM) in Omdurman Pediatric Hospital**

Aisha Ishag Ajib Mohamed and Agba Abbas Gadah - Eldam
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The purpose of this study was to assess the nutritional status and to describe the situation of hospitalized PEM children (<5), at hospital admission and discharge, Omdurman Pediatric Hospital according to the WHO guidelines. Study populations were a sample of 103; malnourished children age 1-5 years, comprised of 59.2% male and 40.8% females, admitted with mean weight 6.7±1.24 kg. The majority were readmitted cases (70%). Children were classified in two groups: wasted (80.6%) and oedematous (19.4%). The total children were followed-up from the first day of admission till discharge. Nutrition status was assessed by Z-scores for the parameters underweight (weight/age), wasting (weight/height) and routine screening was checked by MUAC (Middle Upper Arm Circumference). Analysis of results showed that 94.2% of the children were in severe malnutrition status when screened by MUAC compared to 79.6% by weight for height (P =0.00). The mean duration of hospitalization was 1.4± 0.5 week. Oedema outpatients left the hospital during the stabilization stage due to failure to lose oedema. About 68.9% of the patients discharged, 70.4% had severe malnutrition, 28.2% moderate and only 3.2% were of mild status. Good nutritional status was not observed among the sample and death was lower (6.8%). Defaulters were noted in all the stages among the two groups representing almost quarter (24.3 %). The study concluded that severe malnourished patient failed to gain weight, with 70.4% not defined as cured at discharge according to the WHO guidelines. Therefore, development of a well based monitoring system for follow up of discharged children is needed.

**Management of Severe Malnutrition in Children in Emergency Situations: a Community-based Management Trial, case of Darfur, Sudan**

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This study aimed at evaluating the effectiveness of community-based therapeutic feeding compared to facility-based therapeutic feeding for severely malnourished under 5 years old children in North Darfur State, Sudan in terms of discharge rate, default rate, death rate and program coverage. A sample of one hundred fifty children was taken in two locations. Similar management protocols for severe acute malnutrition were used in both locations. The discharge and defaulter rates in Tawila and Elfasher hospital were 58.8; 75% and 7.4; 22.4% respectively. Only two deaths occurred in Elfasher hospital. These findings reflect the ability for community based approach to facilitate the identification of malnourished children and reduces the defaulters’ rates. Nevertheless, the feeding system was more organized and regular in hospital unlike at household level where the phenomenon of food sharing is quite common. The study recommended the integration of the CTC protocol within the national nutrition protocol as well as strengthening the health and nutrition education programs to raise the mother’s awareness and prevent the deterioration of nutritional status of moderate malnourished children.

**The Right to Quality, Empowerment and Inclusiveness for Education: The Case of Special Groups**

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The overall goal of the educational programme in any country is to increase access to quality learning opportunities for children, both girls and boys in urban or rural areas, whether rich or poor. Basic education is the right of every child who is six years of age and above irrespective of gender. Research has also shown that Nutrition has direct and indirect effect on education, for example, ‘Undernourished children (low height-for-age) tend to be enrolled later in school than better-nourished children (http://www.unscn.org). A number of legislations, strategic plans, and presidential decrees have been issued to support this aim but have not been applied for many reasons, especially in the case of girls and special groups of disadvantaged children. This paper will discuss the challenges facing the education of these children and possible interventions.

Community Based Management of Acute Malnutrition (CMAM)
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This effort aims to raise the awareness of concerned organizations on the importance of involving the community in reducing the incidence, and improving the management of malnutrition in children in emergency situation. The program starts with community mobilization and training of community volunteers for early identification of malnourished children. The next step is establishing a supplementary feeding program. Then networks of outpatient therapeutic centres which take care of children at the early stage of malnutrition are distributed in high risk areas. These centres are not expensive and can be run by medical assistants and medical officers. There do not need sophisticated equipment. With the complicated cases, stabilization centres that provide intensive medical and nutritional care either separate or in collaboration with the already existing health facilities are established. The ultimate goal is the early identification of cases using simple procedures Middle Upper Arm Circumference (MUAC), treatment in the community using Ready To Use Therapeutic Food (RUTF). Using this strategy, the program will increase coverage and improve accessibility.

The Impact of Stability on Global Food Security
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The aim of this paper is to review the potential impact of stability on food security. It has been found that adverse weather conditions, political instability, conflict and economic factors, such as unemployment and rising prices on food may have an impact on the food security status. Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Adverse weather conditions can impact on the productivity of crops and live stock in many ways to decrease yields and/or quality. The reduction in yields and/or quality can occur because, during sensitive stages of crop or animal development, critical physical and/or physiological thresholds are exceeded, or because essential agronomic measures, such as pest control and harvesting, cannot be performed at the optimal time. Research study indicated that food security is obtained through three primary pathways food production, exchange for food, and food transfer, such as food aid. The effectiveness of each of these pathways needs institutions which successfully coordinate future expectations; through, it is unsurprising that political instability and food insecurity are closely related. It has been stated that the conflict over controlling territory is the largest category of causes of inter-state and intra-state conflicts globally. Countries characterized by political instability continue to face challenges in regard to food security. Malnutrition is main cause of child mortality in low income countries and is exacerbated by armed conflict. It is estimated that there are 9.8 million undernourished children under the age of five living in conflict affected countries that is more than two thirds of the 143 million children below five who suffer from undernutrition globally. Conflict-driven malnutrition is eventually lethal on a massive number of children, however its severe effects can be seen in children’s stunted growth.
Knowledge, Attitudes and Practices Towards Infant Feeding in Kadugli Region

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This study was conducted during the period (August 2010- March 2011) in Kadugli town in south Kordofan State, aiming to assess the knowledge, attitudes and practices of mothers towards infant feeding. The target group was a group of mothers who had children under one year of age. Sample of 200 mothers were selected randomly. Results showed that illiteracy rate among respondents was (15%), the majority of the respondents (71%) were housewives, and almost all householders were married (95.5), except (5%) of them who were either widowed or single. more than half of the respondents (57%) received education about breastfeeding mainly from either relatives or health workers. The majority (92.50) of the mothers breastfed the child immediately after birth, as a normal cultural habit among the Nuba tribes, and nearly half of the respondents (47%) received education of exclusive breastfeeding, mainly from health working cadre (68.40). One third of the respondents (37.5%) said they began breastfeeding when the child cries, and (55.5%) of the mothers started complementary feeding from 4 to 6 months. About half (47%) of the respondents were using their hands to offer the infants meals. More than half of subject (55.5) offered milk and dairy products during complementary feeding. Few of the respondents (10.5%) were not satisfied with the available health services at the area of Kadugli.

Principles, Standards and Policies for Food and Food –Related Aid Distribution to Children during Man-Made Crisis (Case: South Darfur Internally Displaced People Camps)

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Ahfad University for Women

Some parts of Sudan have suffered for a long time of hardship as a result of armed conflicts. Intensified fighting has displaced 430 000 people in Darfur in 2014 alone. Humanitarian aid organizations and agencies help in many ways in an emergency, but perhaps the most immediate help is to ensure that people have enough to eat.

There are internationally identified principles and standards that govern the food and food-related aid distribution, once relevant institutions (international organizations, donor governments, NGOs, etc.) have determined to provide aid. One of these principle and standards, which is the focus of the present research, is the “Special protection and assistance for vulnerable groups” mainly children. The present study is attempting to study what principles and standards that govern food distribution to children now and at the beginning of the displacement. Two Internally Displaced People IDPs camps (Attasah and ElSalam) which are located near Nyala, the capital of South Darfur constituted the sites of the research. A questionnaire was used to collect data from 100 mothers and their the child care if She/he at the school-age and the participants were randomly selected. The international organizations that were previously involved in the distribution of the food were: OCHA, CHF, World Vision, World Food Programme WFP and the national organizations were NEDO, Peace Development Organization, and Jebel Marra. But now only WFP is carrying this role.

Previously, when all these organizations were working in the distribution of food there was consideration for the woman whether pregnant or lactating, and children in the type and amount of food distributed and its suitability to their culture, but now no such measures are taken. A lot of children were found suffering from malnutrition. No one pays attention to the voices of the inhabitants of the camps as was the case previously.

Impacts of Feeding and Traditional Practices on Nutritional Status of Children (6 months to <2 years) in Geneina Town, West Darfur State, Sudan

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This is a community based, descriptive study, conducted in Geneina Town, west Darfur state, aiming to assess impacts of mothers feeding practices and traditional healing process on nutritional status of children (6 months to < 2 years). Study population included (227) of mothers with infant/child. More than half (54.2%) of families had 2 children <5 years, (94.7%) of households were headed by fathers. More than half (55.5%) of respondents had low level of education, (40.5%) were depending on a daily work as source of the family income. Global Acute Malnutrition (GAM) among children was (13.8 %), Moderate Acute Malnutrition (MAM) was (11.9 %), and prevalence of Severe Acute Malnutrition (SAM) was (1.9%). Prevalence of moderate stunting was (23.4%), and severe stunting was (9.3%).

Majority of Children (91.6%) were receiving breastfeeding, and (60.1%) were breastfed within 30 minutes after delivery. (59%) of respondents were aware about colostrum, (52.4%) of mothers had knowledge about exclusive breastfeeding. Average time to receive exclusive breastfeeding was (4.75) months. One third (35%) of mothers stopped breastfeeding because of their child's illness. About half of mothers (44.5 %) gave their children 2 to 3 meals per day, with (5) months as the mean time for starting complementary feeding. Most of mothers (95.6%) knew about diarrhea and (56.3%) of mothers were attributing diarrhea to germs. The majority of respondents (93.1%) were thinking that the Oral Rehydration Solutions (ORS) could save children lives, (85.7%) of mothers knew preparation of ORS, and (90.4%) learned that from health care units. More than half (58.6%) of respondents obtained drinking water from water pipes.

Most of mothers (59%) received prior information on breastfeeding, (58.6%) received information on complementary feeding, and (73%) received information in health centers. Majority of respondents (94.3%) would take their children to health care unit, if sick. For the reasons of mothers going to traditional healers, (40%) of mothers claimed that a child was heeled in previous experience. (73.6%) of mothers had a prior knowledge on child malnourishment, (91.6%) took malnourished children to hospital. Two thirds of respondents (74.9%) took their children to traditional healers, (50.4 %) of children were given herbs and (61.5%) were cured after traditional healing practices. This study recommended that Ministry of Education should incorporate the topics of food and nutrition into curriculum, describing major types of nutrients in different foods. There is an urgent need to educate mothers for awareness towards practices of breastfeeding and complementary feeding. State Ministry of Health and partners could collaborate with community leaders to implement nutrition intervention programs in Geneina. Dangers of applying traditional healing methods, such as low level of hygiene or using unsterile tools should be emphasized. Most of these traditional practices were applied on children who were already sick.

The Role of School Feeding Program Supported by DAL Company in Students’ Enrolment and Drop-out: Ahmed Alradi Gaber and Alamel School in Omdurman -Ombada Locality

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School feeding program as a social safety net has been popular in developing countries as an instrument for achieving the Millennium Development Goals. These programs are frequently targeted towards families of low socioeconomic status, unable to send their children to school or face poor attendance and drop-out from school. In the present study an attempt has been made to analyse the role of school feeding program supported by DAL Company in students’ enrollment and Drop-out in Ombadda Locality (Alamal and Ahmad Alradi Gaber School). The results showed that the majority of the students’ parents were lacking formal education, worked in the informal sector to support their families. All teachers and students’ parents considered the most frequent reasons for dropping out of or not enrolling in school are the poor financial standing of the family. Moreover, all of them agreed that DAL school feeding program had a positive impact on educational attainment by increasing enrolment, attendance and reduced students’ drop-out.

Children under Nutritional Stresses in War-torn Countries

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Malnutrition in Sudan is not limited to conflict–affected areas and it is important to note that about 52 per cent of the acutely malnourished children live in nine non-conflict affected states (Red Sea, Kassala, Gezira, Khartoum, Northern, River Nile, Gedaref, Sennar and White Nile). Displacement in conflict affected areas clearly increases fragility and the prevalence of malnutrition but additional factors are important as well, including feeding habits, awareness and practices of child care, sanitation and access to health services. Over the last years Government of Sudan (GoS), Ministry of Health (MoH) in collaboration with national, international partners and UN agencies has significantly scaled up the services for prevention and treatment of acute malnutrition. A 2015-2017 multi-year community based management of acute malnutrition scale up plan to increase access to services to treatment of acute malnutrition is in place. In 2015 the number of facilities, providing treatment of acute malnutrition reached 945, with 20% increase from 795 facilities in 2014. As a result of the expansion of the services, 131,000 children with severe acute malnutrition had been receiving treatment in 10 months a year. This is 15 % and 28% higher achievement than similar periods in 2014 and 2013; respectively. In addition to the contribution of humanitarian and development partners, MOH has funded procurement of therapeutic supplies and human resource development for management of acute malnutrition. Complete multi-sectoral approach, which addresses the underlying causes of malnutrition, is required in Sudan. Already a policy brief by MOH has set the direction for a concerted long term multi-sectoral approach to tackle malnutrition. In addition, a policy document was jointly developed by MOH, WFP, and UNICEF, on an investment case for resource mobilization for implementation of evidence based scale up of nutrition sensitive and specific interventions is in the pipeline awaiting approval by GoS. While these are notable initiatives which set the foundation for tackling malnutrition, there still exists considerable gap in addressing malnutrition. There is significant unmet need for improving access for management of acute malnutrition, prevention of micronutrient deficiency and improving the awareness and practices on child caring practices across several states in Sudan. Affected population during 2013 nation-wide S3M survey results released by the Ministry of Health and Multiple Indicator Survey (MICS) 2014, revealed above emergency level acute malnutrition among children under five across the country. A total of 59 out 184 localities and 7 out of the 18 states of Sudan had malnutrition prevalence above 15%, which is above emergency threshold as per the WHO threshold for assessing severity of malnutrition. About 2 million children suffered from wasting annually, out of which over 560,000 are severe acute malnourished. Maternal nutrition is also of great concern. An estimated total of 330,000 pregnant and lactating women are undernourished annually.

Assessment of Knowledge, Attitudes and Practices of Mothers toward Infant and Young Child Feeding at Omdurman Maternity Hospital (Aldayat)

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Broad coverage of breastfeeding and complementary feeding interventions can reduce 20% of deaths in young children. The purpose of the present study was to assess knowledge, attitude and practices of mothers toward infant and young child feeding. Cross-sectional descriptive study was carried out in Omdurman Maternity Hospital among randomly sampled 277 mothers. The results showed that most of mothers (95%) knew of the importance of breastfeeding. Significant relationship was detected between mothers education levels and mothers’ knowledge about importance of breastfeeding (p= 0.01). Almost half of the mothers gathered their nutritional information from their relatives and friends, significant relationship between mothers education level and source of nutrition information about child feeding ( p= 0.00) .The majority of mothers initiated breastfeeding immediately after delivery (80%) with the mean of breastfeeding duration about 18 months. It was observed that 49.5 % introduced foods between 6 and 8 months. Significant relationship was found between time of introducing complementary food and source of nutritional information about infant feeding (p = 0.00). The study concluded positive and negative infant feeding practices among mothers towards their
children and recommended that appropriate action should be taken to improve infant feeding practices among mothers in Sudan.

**Risk and Returns: Household Priorities for Resilient Livelihoods in the Darfur Region**

Merry Fitzpatrick¹ and Helen Young ¹, with Shadia Abdelrahim Daoud ², Awadalla Mohamed Saeed ², Sarra Rasheed Ahmed Beheiry ² and Niveen Salah Eldin Elmagboul²

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This is a study conducted jointly by AUW and the Feinstein International Center, Tufts University. It investigated the resilience and recovery of livelihood systems in four case-studies, exploring those factors that enabled households to meet their nutritional and other needs both during and after crises. It adopted an iterative, stepwise approach, starting with a desk study, followed by a scoping study and expanded operational research covering four case studies. Total sample of 333 households was drawn from 28 villages in seven localities across West, East, and South Darfur. Field methods included semi-structured interviews and Participatory Rural Appraisal techniques-livelihood mapping and community resource mapping, timelines, and proportional piling and the development of the Income Streams Index.

Differences in impact from a particular shock or combination of shocks and rates of recovery depended on multiple factors, including initial livelihood activities, ability to engage in profitable alternative activities, access to major markets, and access to basic services, but most significantly the ability to engage in cultivation and animal rearing. Cultivation and animal rearing depend on access to natural resources (i.e. land and water), which in turn depend on power balances and social networks. Power balances between groups who share use of particular natural resources have shifted significantly, limiting access to these resources for a large portion of the population and preventing their full recovery. Local mechanisms to negotiate and manage natural resources have been undermined by policies and the continuing presence of arms. Programs and policies aiming to promote resilient livelihoods in Darfur should focus on cultivation and animal rearing rather than activities with lower earning potential, largely through supporting the revitalization, adaptation or development of mechanisms that allow equitable management and use of natural resources.

**Traditional Healing Practices to Therapeutic Feeding Programs among Wasted Children (<5): Three Examples from IDPs Camps in Darfur Region**

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In the wake of the recently witnessed conflicts in Darfur region, many camps were established to cater for an Internally Displaced Person (IDPs) and their children, usually located in the outskirts of the main towns. Three examples from Darfur region are demonstrated for explaining intervention programs, pertaining among wasted, malnourished children. Some practices of intervention included the followings examples, to reflect activities and scenarios for malnutrition management:

i. Traditional healing practices: Many types of traditional practices such as surgical intervention, burning the skin, herbal intake, tooth breaking, or other locally known practices as (Tungtung ) and (Hubal Fur) were used as augmenting tools to the management of malnutrition disorders. Infants and young children (<5), even for those who underwent through acute malnutrition, were often passed to the traditional treatment before being admitted to the health facility or nutrition centre for support.

ii. Supplementary feeding impacts: Ready-to-Use Therapeutic Foods (RUTF) formula with Plumpy Nut is used for management of Moderate acute malnutrition (MAM) in Otash Camp (Nyala, S. Darfur). Cases of new admission over 2014 were 25353. Those cured were about 87.6%, Defaulters made 11.4%, while mortality rate was only 1%.

iii. Therapeutic foods, among children (<5) in IDPs camps: Admitted children were treated with cereal Soy Blends (CSBs) for 3 months. Normal were about 6.4% (8), MAM were 76.8% (96) and Sever Acute Malnutrition (SAM) cases were 16.8% (21). However, after 3 months of Community Based Management of Acute Malnutrition (CMAM), 84.1% (69) totally recovered. Average weight gain was 19.4%, estimated to 21.9g/day, leading to the recovery of 84.1% of those who completed the three months period when measured by WFH Z-score. MUAC (Middle Upper Arm Circumference)
was used as entry criteria. After 3 months, only 14.6% had normal status and the majority (80.8%) suffered mild wasting and only 4.9% moderate wasting

**Child Nutrition and Man-Made Crisis**

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Man-made crisis including conflict distinguished with massive civilians flee from their original home to new settlements social, security and economic systems of the affected community are worse disrupted. Conflict did negatively impacted livelihood, food security patterns that will eventually create famine. Africa witnessed armed conflict in 17 countries during the period 1990-2003 where the prevalence of underweight among under five children is the highest in the world.

The main goal for this study is to know the effect of man-made crisis on child nutrition in Jabarona Outpatients Therapeutic feeding center in Umbada locality in Khartoum State. The sample selection criteria using simple random targeting mothers, with a child aged 6-59 months admitted in the OTP, who had severe malnutrition without complication and affected by conflicts in Sudan (from South Kordfan and Darfur, constituting most of it population). The sample size was 300 children (153 girls, and 147 boys).

The study concluded that the nutrition status of the studied children has been affected by families’ income and food security on short as well as long term. That resulted in admission in the outpatient program (that were clear in the treatment follow up card). It showed that behaviors change and health and nutrition awareness session held in both OTP and community level were not enough to tackle malnutrition, other interventions including water, health and small livelihood projects promising to improve condition. It recommended investing in related intervention to increase access to food for family members, including children, health and nutrition awareness sessions and more male participation on such activities.

**Experience and Practice of the Child Friendly Centres, Khartoum State**

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This paper aimed at the best practice project in Khartoum State, as a child protection project. Since 2003, Khartoum State was faced by many displaced, street children and drop-outs. The project started by mobilizing the local communities, at Umbadda and Karary localities (supported by UNICEF, Save the Children Sweden, Hope and Homes). Then Jebel Awlia & North Bahry Localities (supported by Child Protection Initiative Middle East North Africa (MENA) and Submarine Communications Cable System (SCS)).

The objective was to highlight and to find out the results of the programs to handle the problems facing these vulnerable children in collaboration with the local communities. The method used was descriptive analytical method using a questionnaire, 25% out of the total 3777 children benefited from the program, meeting with 144 families, 20 voluntary teachers and 60 from the local communities, as tools to collect the data.

Data collection on the children’s situation, via mobilizing the local communities by forming small committees in each locality, training the voluntary teachers and the local committees on CRC and other issues concerning vulnerable children, attracting the children by offering psychosocial programs, a meal and clean drinking water in centres provided to the project voluntarily, and providing basic education after assessing each child with the help of the Ministry of Education, vocational training for the elder children using workshops in the same locality (Usratuna, SOS, etc.) About 74% were between 9-14 years old who needed to be provided education in the centres, while 26% were under 9 years, consequently accepted at schools after behavior modification, 30% of them were working and had to work after studying. Half of them were drop-outs (displaced), when asked about their teacher, 97% had good relationship with their teachers. About 88% of the families were from first degree relationship, while 12% of them were from the same tribe. 90% of the local leaders thought that the centers provided the children with rehabilitation services. And that they benefited from the training. The voluntary teachers think that most of the
problems they faced were economical and family problems. They also tried to convince families to accept their girls after they were convinced of the project.

**Promotion of Local Peoples Traditional Knowledge to Secure their Food in Drought Prone Areas**

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National Food Research Center, Shambat

Indigenous or wild plants are those plants which grow wild, with their existence depending upon the climate and the natural plant coverage in the region. It also differs according to the different seasons of the year.

Because of the availability of famine foods in the Sudan and the African Sahelien horn, it represents a particularly suitable study case in the use of famine foods as foods for man. Such foods may be defined as uncultivated indigenous plants which comprised a significant proportion of, or in some cases the entire, dietary intake of the famine stricken population. The definition of famine in this context is a shortage of food which leads to hunger, notable emaciation and a considerable increase of mortality in the affected community.

From the limited nutritional information available, famine foods used in Western Sudan would appear to have comparable food values to that of normal dietary components. Mukeit (*Bosia senegalensis*), Koreeb (*Dactyloctenium aegyptium*) could be regarded of nutritional value, comparable with standard cereals, doum palm kernel (*Hyphaene thebacia*), with nut-legumes and Kawal (*Cassia obtusifolia*), with cultivated vegetables. Potentially, a “balanced diet” could be achieved by combined usage of such foods. Although consideration of possible disadvantages and potential hazards of these and similar foods must be made.

**Water Supply, Sanitation and Hygiene Status in Kassala State, Eastern Sudan**

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This paper is based on baseline assessment carried out in four localities in Kassala State during 2014-2015. The aim of the survey is to provide information and identify gaps in practice regarding sanitation and hygiene existing practices that lead to negative impact on health. A total no. of 2114 households was tested for 13 WASH indicators. Results found that there were insufficient supply of water, especially during summer (commonly between February-June) and dry spells during the rainy season. Moreover, there was poor access to appropriate permanent water source since only 46.61% used a whole year functioning water source. There seemed to be rather insufficient knowledge of the critical times for washing hands. Those who reported washing hands in all of the 5 critical times constituted only 3.9% of the respondents. Results also indicated that only 15.13% of the respondents used improved sanitation facility such as improved latrine or toilet with drain / hole. Lack of household latrines and adequate sanitation facility encourage human to dispose waste in open areas. Yet, only few respondents use open defecation (3%). However, most of the respondents (73%) did not dispose children excreta in a safe manner. It is recommended that access to appropriate permanent water source is extremely needed to improve sanitation practices. Increasing the level of community awareness and understanding about hygiene and sanitation practices will reduce disease transmission.

**Nutrition and Health Status of Children in War Affected Areas in Eastern Sudan**

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This paper is drawn from a baseline assessment to identify major health and nutrition problems by investigating the levels of key nutrition and health indicators. It was conducted in Hamashkoreib, Telkook, North Delta and Aroma localities of Kassala State, Eastern Sudan during 2014-2015. Cross-sectional anthropometric data of children aged between 0 and 59 months. Data was gathered via 39 nutritional and health indicators. Data was collected from the four targeted localities using diverse tools. Results were presented using different classification systems and reference population. The prevalence cut-offs followed WHO standardization. Results found that acute malnutrition rates among
children 0 to 59 months were quite high throughout the sampled area with Global Acute Malnutrition (GAM) at 22.8% and Sever Acute Malnutrition (SAM) at 9.6%. When this prevalence rate is translated into number of children, it showed several hundred children requiring treatment for severe acute malnutrition. Furthermore, applying the new WHO recommended Middle Upper Arm Circumference (MUAC) cut-off of 11.5 cm to define severe acute malnutrition, SAM prevalence jumped even further to 9.96% and GAM to 35.6%. The paper recommended that emphasis should be placed on reducing malnutrition and anaemia rates and provision of nutrient supplements. Increasing community awareness of the current health issues of concern is highly recommended. The factors limiting household level dietary diversity should also be explored to identify potential interventions to increase intakes of key nutrient rich food groups. Improving household level consumption of these foods will likely improve child intakes as household availability and child intake are closely linked.


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University of Behri

Wasting and Stunting are forms of malnutrition. This is a community based cross sectional study carried out in Elnaser administrative unit, Jabal Awlia locality, Khartoum state-Sudan, aimed to measure wasting and stunting in preschool children and the factors affecting case study (Alamal Alakhdar kindergarten) Elnaser Administrative Unit. A total of 259 children were selected with total coverage sample during the period between Nov. 2014 to Oct, 2015. Results showed that 98.8% (255 out of 259) were normal weight at birth, while only 4 (1.3%) were low birth weight. About 85.3% came from well off families which might have positive effects on the child health and nutrition in the future and vice versa. One of the common causes of wasting and stunting between kids is eating sweets and similar stuffs (51.7%) instead of their main meals, educational level of the mothers who not educated, illiterate participated (24.3%) of the sample were ignorant mothers while the percentage decreased to (10.4%) for the educated mothers. Eating food together reflected negatively on kids, resulting in stunting and wasting growth up to (59.5%). Analyzed data in this study showed that most of cases could have been prevented by proper and healthy nutrition, with growth monitoring in preschoolers. Accordingly, this study recommended that improving, updating, and analyzing of registration system in kindergartens is very important in such studies. Provision of nutritionists or preparing of health education sessions during parents open days could contribute in better child development and prevent growth defects in addition to minimizing bad nutritional habits. Moreover, eating habits should be directed to feed kids alone to insure that they had their portions adequately, which could affect their body weight.

**Effectiveness of Ready-to-Use Therapeutic Foods (RUTFs) Used for Dietary Treatment of Children Suffering from Severe Acute Malnutrition in Dilling Locality- South Kordofan**

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This Study was conducted in Dilling city at Dilling hospital and Alomat Health Center, aiming to evaluate the effectiveness of PlumpyNut in the rehabilitation of children who suffered from severe acute malnutrition in South Kordofan. To achieve the objective, changes in nutritional status using indicators such as weight, length, Mid-upper arm circumference, blood profiles, and psychological behavior were monitored and assessed. The criteria used to include patients in this study were as follows: children aging 6-24 months with Sever Acute Malnutrition (SAM) without medical complications and with appetite. Results showed that cure rate was 88.6%, compared with the Sphere Standards (≥75%) and defaulter rate was 11.4%, compared with the Sphere Standards (≤15%). The average daily weight gain was 5.7g/kg/day which is considered higher than normal, when compared with Sphere Standards (5g/kg/day). The mean level of hemoglobin after treatment was 64.7%, compared with 60% before the treatment process. This difference of 4.7 was significant (P=0.000). There was noticeable improvement of mood within few weeks following the initiation of treatment with PlumpyNut, reflected in smiling, happiness and activeness of the children. These findings proved
that, the PlumpyNut, used as part of outpatient care program, reduced the number of children who needed inpatient treatment.

The recommendations of the study PlumpyNut (RUTF) used for treatment in emergency situations could be used for non-emergency conditions. Further research is required to verify the possible utilization of PlumpyNut in treatment of different status for anemia, such as anemia during pregnancy, HIV patient, and tuberculosis (TB) cases. In the Sudan, high levels of poverty, lack of economic opportunities, environmental challenges and lack of access to basic services contributed to elevated prevalence of malnutrition. Marginalization of segments of the population, coupled with on-going crises and conflict has led to further challenges for child health and nutrition in Sudan.

**Knowledge and Practices Towards Home Management of Children under Five Years of Age with Diarrhea in Eldamazein Teaching Hospital**

**Rogaia Osman Ali Elnaeim**

Nutrition Department, Ministry of Health, Blue Nile State

The main objective of this study is to assess the home management of diarrhea in children under 5 years of age, involving 100 mothers, accompanied by their under 5 years children with diarrhea. All the mothers were met by the researcher.

The results showed that the level illiteracy rate was very high (64%) among the respondents and it was noticed that about (95%) were housewives and (47%) of families used cart for fetching water, nearly 83% of families used ground pit as toilet. A sum of 72% preserved their foods outside in open air, 77% had completed their immunization, 94% of mothers gave their children breastfeeding on demand, 56% of the children were breastfed exclusively, while 44% of mothers were not exclusively breastfeeding their children, 9% of mothers introduced complementary feeding when the child age was less than 4 months and 45% of the mothers gave the child three meals per day. A majority of (92%) of the mothers did not use bottle feeding, 76% of mothers continued breastfeeding during diarrhea, (19%) of mothers gave the child some herbs as traditional medicines, 50% of mothers increased the amount of food, provided to the child after relief of diarrhea, 14% of mothers claimed that the breastfeeding increased diarrhea, 81% of mothers were somewhat knowledgeable about how to prepare Oral Rehydration Solution (ORS), 89% of mothers used hot water in preparing ORS, (52%) of mothers said that ORS could stop diarrhea.

**Food and Nutrition for Vulnerable Groups**

**Salwa Abdelrahim Sorkatti**

Director of National Nutrition program, Federal Ministry of Health, Sudan

Since the last century, Sudan keeps suffering from a silent killer in a form of static acute and chronic malnutrition rate which is affecting the children <5 years of age; the most vulnerable age group. The first reports in the status of the country regarding malnutrition in 1987, indicated that 32% stunted children, which was more or less similar to the then current 35% level of stunting. Furthermore, Sudan has global acute malnutrition rate of 16.4%, severe acute malnutrition of 5.3. It is estimated that close to 500,000 children aged less than 5 years suffered from severe acute malnutrition, while close to 2 million children are stunted annually.

Service delivery, alongside with the policy level work, the provision of nutrition service were all expanding. In 2016 alone, more than 200,000 severely malnourished children were treated from malnutrition through more than 1000 treatment centres, more than 400,000 women all over the country had improved knowledge and benefited from proper counselling on Infant and Young Child Feeding Practices, 5,400,000 children were receiving 2 doses of vitamin A annually, 255,919 pregnant women received ferrous sulphate and folic acid tablets, with close monitoring of their growth through the growth monitoring and promotion program. Moreover response to crises such as floods, Acute Watery Diarrhoea (AWD) and population movement was up to 100% during the course of 2016.
Assessment of Nutrition Status for Children with Physical Disabilities Affecting Food Intake, Aged (2-5) Years in Khartoum Cheshire Home (KCH)
Sana Elsir Awadalla Khalid
Ahfad University for Women

This is a cross-sectional descriptive center based-study to assess nutritional status and dietary intake for children with physical disabilities affecting food intake, aged (2-5 years) who attended Khartoum Cheshire Home located in Al-Taif; during the period from November 2015 to March 2016. The study included 30 children. Results revealed that (6.7%) of children had severe wasting and (13.3%) had moderate wasting, children suffering from stunting in the sample, 48.4% with severe stunting and (9.7%) with moderate. Above 3 quarters (76.6%) of the children had inadequate protein intake, (86.6%) of children had inadequate energy intake, (50%) of these children did eat three meals per day and (40%) had difficulty with handling food. (33.3%) had chewing difficulty and %20 had swallowing difficulty, (6.7%) dyspepsia difficulties; respectively. Some of the patients did not obey the dietary advice.
The study concluded that most of the children had inadequate energy and more than half had inadequate protein intake and recommended that measures should be taken to overcome eating difficulties to improve nutrition status for children by overcoming eating difficulties using special utensils and employ more innovative methods directed towards the children to fill the inadequacy gap of protein and energy.

An Overview of Food Security in War Affected Areas in Kassala State
Sarra Rasheid Beheiry
School of Rural Education Extension & Development, Ahfad University for Women

This paper is based on the findings of a consultation workshop conducted in Kassala State in August, 2014 by Ahfad University for Women (AUW) and World Food Programme (WFP). It aims to reflect livelihood patterns and food security situation in Eastern Sudan. Sixty five participants from community representatives, government, and local and international and national non-governmental organizations partners were consulted. The study found that the recent food gap in Kassala State resulted from the successive failure of the past agricultural seasons coupled with internal migration and reduction in the areas of land under cultivation. Generally, the food gap in Kassala State prevailed for 6 months and extended to 8 months in bad rainy seasons. Accordingly, about 80% of the population in Kassala State were highly food insecure, with different variations. As a consequence of this food gap, the state suffered from massive malnutrition and food deficiency diseases/illness. However, to overcome these food gaps, families resorted to different coping strategies such as sales of livestock, handicrafts such as straw-zaaf- handicrafts making, weaving clothes, food processing, petty trade, and recently gold mining. Some of the negative consequences were increased level of crime rates, child labour and child marriage. It was recommended that it is highly needed to increase family resilience programmes, and adopting early warning mechanism to communities to improve their health status while, increasing capacities and skills via training in income generation and micro-finance services.

The Effect of Household Food Security on Nutritional Status of Pre-school Children
(A Case Study of Umbada, Omdurman, Sudan)
Sawsan Ahmed Mohammed Balla
School of Health Sciences, Ahfad University for Women

This study was conducted to see how far food insecurity of some Sudanese families may result in an adverse nutritional status of preschool children. Randomly selected sample of 110 households living in Umbada locality Omdurman were surveyed and tested for anthropometric measurements of weight and height as well as Middle Upper Arm Circumference (MUAC) to assess the socio-economic and nutritional status of the selected sample.

Results showed that the nutritional programmes of the Ministry of Health were not that effective, since there were no instruments for monitoring and weighing children and because these programmes
do not monitor low weight children. The results of socio-economic analysis indicated that households’ heads had low income levels, spending over 80% of income on food, yet they had imbalanced food intake. These households suffered from health problems and poor nutritional awareness. Similarly, the results of the anthropometric measurements analysis revealed that about 72% of the preschool children were normal, 10% were moderately malnourished and 7% were medium malnourished and 11% were severely malnourished. These results indicated some differences in status of malnutrition, which needed to be carefully considered when recommending solutions. The study concluded that there was a significant relationship between malnourishment among children in the preschools of Umbada and adverse socio-economic and food security situation of their household. The study recommended increasing nutritional awareness of mothers and supplying of balanced meals and support the nutritional programmes with required equipments to reduce the risk of children food insecurity in Umbada and elsewhere.

**Provision of Key Messages on Dietary Practices of Vulnerable Beneficiaries, Bindizi Locality, Central Darfur State**

Sidiga Washi
School of Health Sciences, Ahfad University for Women

The aim of this study is to assess the current health and dietary practices of families living in Bindizi locality, Central Darfur State and to propose suitable intervention. A sample of 60 mothers (household) were randomly selected and interviewed. A six sections instrument (questionnaire) was designed to collect data on family profile; food behavior pattern; food frequency intake by small children (under 10 years old); mother’s attitude towards child nutrition; mother’s feeding practices for the family; and child health and hygiene practices.

The food frequency table for food items eaten by children from the major food groups revealed very striking results in term of the poor consumption pattern of children for almost all food groups. The only items consumed more than once a day were vegetable oils (51.7%), mostly added to “Assida”, tea (60%) and tea with milk (25%). This consumption pattern will have many implications for child health and nutrition. Mothers were aware of the proper hygiene practices related to their child wellbeing. However, children in this study were affected the most with diarrhea (63%), malaria (63), fever (48.3%) and stomachache (36%). Water disposal was correlated with the presence of some health problems, affecting children such as malaria (P=.009) and stomachache (P=.025). Moreover, garbage disposal outside the houses has an impact on health status of the children resulted in presence of typhoid (P=.009) and vomiting (P=.003) among the children. This assessment has shown the potential positive impact of considering educating mothers in new local food fortification (enrichment) procedures for their children, coupled with messages on exclusive breastfeeding and gradual introduction of nutritious weaning foods initiatives as interventions to improve child health and nutrition.

**Contribution of Sudanese Traditional Foods to Food Security of Vulnerable Groups**

Somaya El Bashir El Tayeb
School of Health Sciences, Ahfad University for Women

This study was conducted during the period November 2013 to September 2015 in seven Sudanese States, namely Khartoum, Gazira, Sinnar, Northern State (Al Shamalia), River Nile, Kassala and Gadareif, in the areas visited by the annual extension trips of Ahfad University students. The objectives of this study were to assess the contribution of Sudanese traditional foods to food security of vulnerable groups, evaluating the dietary consumption in relation to geographical location and other environmental conditions and to determine the factors which may influence the food habits. The sample considered was 489 respondents (483 females and 6 males).

Results revealed that most of the respondents were females within the age group 25-35 years old (46.3%), the illiterate represented 18.8%. The education level has a great influence on food preparation and the type of meals eaten by the families. Only 5.6% of the family income resource came from mothers. The most common traditional family food was Kissra which represented more than one third
of the traditional food (37.4%). Almost 34.8% of those families used dried okra powder (weika) as a thickening agent for stew, as a source of food. It was then concluded that; to sustain their living, most of those families use weika, 28.0% of them use Roube (sour yoghurt) as fermented food and some of the respondents used sharmoot (dried meat), while 10.7% of the families used fermented fish (Fasikh). The minorities of those families 0.2% used fermented Kawal leaves (Cassia obtusifolia) and animal internal and fats (mires). The most traditional family food was Kissra which represented half of the food taken (51.9%), followed by Asida (from Durra or sorghum) and Gorassa, a pancake from wheat flour.

### Infant and Young Child Feeding and Weaning Practices among Mothers in Northern Kordofan State

**Haram Mahmoud Sirdar Issa Adam** and **Somiya S. Gutbi,**

1Ahfad University for Women; 2University of Bahri

This study aimed to identify infants feeding and weaning practices among mothers of children from 0 to 24 months of age in three towns (Bara, Al-Rahad, and Al-Nuhoud) in North Kordofan State. Study sample consisted of 250 families. Regarding breast feeding, 83.6% of mothers initiated breast feeding immediately after birth. Almost half of the mothers (55.2%) stopped breastfeeding when the child was 24 months old. The age of termination of breast feeding was significantly influenced by the education of the mothers. (p. value = 0.01).

Concerning complementary foods, It was observed that only 6.8% of the mothers in the present study practiced exclusive breastfeeding. 91.6% of the mothers introduced complementary foods before six months of age, while 8.4% started giving foods at six month and over. Significant association was found between education and the age of introduction of complementary foods (p value = 0.002). In Weaning practices, almost half of the mothers (52%) abruptly weaned their children while only 11.6% gradually weaned their children. The study concluded both positive and negative infants feeding practices prevailed among mothers towards their children and recommended developing some strategies to promote infant feeding to reduce infant mortality and morbidity rate in Sudan.

### Ethical Issues for Food Security and Child Nutrition

**Somaia Alsayed**

School of Health Sciences, Ahfad University for Women

One of the great dilemmas in Sudan is how to secure and provide plentiful, healthy and nutritious food during crises, especially for children, in an environmentally sustainable and safe manner, while addressing the multiple burdens of undernutrition, overweight and obesity and micronutrient deficiencies.

The food security focuses on ensuring the world producing and consuming enough calories in bulk to reduce hunger and safeguard survival, as opposed to a goal that includes nutrition for well-being and development. When integrating food security with nutrients, some of the key ethical issues to be considered included how to make societal decision and defining values about food security, that impact nutrition outcomes, and the ethical trade-offs between environmental sustainability and ensuring that individual dietary and nutritional needs are met.

### Role of UNICEF in Children Nutrition

**Talal Mahgoub**

UNICEF, Nutrition Specialist, Sudan

UNICEF supports a range of activities to ensure capacity to detect, prevent and treat malnutrition in Sudan, including early warning systems and nutritional surveys, coordinating responses with partners and contributing to multi-sectoral approaches for prevention of malnutrition. To help tackle acute malnutrition, UNICEF provides technical support and equipment to partners, helps to consolidate
national standards and supplies specialist foods such as therapeutic milk and nutritional pastes for rehabilitation of severe malnutrition in both facility base and community based selective feeding programmes. Support is also provided for strengthening identification and referral systems for severely malnourished children. UNICEF also works with government to deliver a ‘Minimum Nutrition Package’ of key preventive activities in health facilities, through a standardized health worker training package and provision of material support for implementation of services. Preventive activities include vitamin A supplementation for children and postpartum women, growth monitoring and promotion, distribution of iodized oil capsules in areas where goiter is endemic, promotion of iodized salt, iron and folic acid supplementation for pregnant women, promotion of optimal infant and young child feeding and screening and referral for treatment

Prevalence of Anaemia, Vitamin A, Zinc and Copper Deficiencies among Adolescents in South Darfur State Sudan
Umsalama Nail Eidam and Abubaker Uro,
Ahfad University for Women

This is a cross sectional study, conducted to investigate the prevalence of anaemia, vitamins A, iron, zinc and copper deficiencies among 338 adolescents attending high schools in Nyala city, South Darfur state, Sudan and to study the relationship of hemoglobin (Hb) levels with these micronutrients among anemic adolescents. The results indicated that anaemia (Hb<13g/dL for males and <12 g/L for females) was prevalent among students, where, 88.1% of males and 88.5% of females, were anemic (overall 88.3%). 75.4% of anemic students had mild anaemia (Hb ≥10g/dL) while 23.4% and 1.2% had moderate (Hb 7-9.9 g/dL) and severe anaemia (Hb<7g/dL); respectively. The prevalence rates of iron deficiency (serum ferritin < 50µg/L) and iron deficiency anaemia (Hb<13g/L for males and <12 12g/L for females, serum ferritin < 12µg/L) among students were 54.9% and 23.8% respectively where 76.4% of females and 50% of males were iron deficient and 12.2 % of males and 34.8 % of females had iron deficiency anaemia. Vitamin A deficiency (retinol<20µg/dL) was found in 53% of males and 44.6% of females (overall 48.7%). The prevalence of zinc deficiency (zinc<70 µg/dL) was 24.1% in males and 20.75 in females (overall 22.2%) while copper deficiency (<70 µg/dL) was among 6.5% of males and 4.4% of females (overall 5.35). Hemoglobin and ferritin levels were significantly (P<0.001) lower among severe anemic students. Furthermore, there was significant positive correlation between hemoglobin and ferritin (r =0.150, P=0.027) and between zinc and copper (r=0.268, P<0.001) among anemic students. In anemic students, the relative risks of having iron deficiency anaemia and iron deficiency were 1.6 (CI 0.6-4.2) and 1.0 (95% confidence interval (CI) 0.5-2.1); respectively, while there is increased risk 1.7(CI; 0.2-13.4) of being copper deficient. Anemic students had a risk of 1.4 (CI; 0.5-3.9) being zinc deficient and 1.5 folds (CI; 0.7-2.9) of being vitamin A deficient.

Role of Building Resilience on Food Security for Child Nutrition Status in Darfur States
Wafaa Badwi Abdalla
National Nutrition Programme, Federal Ministry of Health

Darfur on-going conflict affected negatively household coping strategies, creating room for reliance on humanitarian assistance. Building household resilience capacity post man–made crisis is an expected transition phase from shocks and stresses to recover and moreover can prevent new conflicts. Equipping households with knowledge, on inter-related factors and determinants on food and food security, Water and Sanitation Hygiene (WASH) can enhance child nutrition status. To date, three project evaluation phases (baseline, interim, end -Taadoud project) implemented through 26-months targeting the five Darfur states, applied three main strategies: i. Improving household-level food security, nutrition, ii. Strengthening community-level Disaster Risk Reduction (DRR) iii. Saving & Internal Lending Community (SILC).
A comparative two-stage systematic random cluster sampling method was used for this study with the “communities” of 18 villages from all Darfur and ultimately, 1,999 total households with child were
under five years were surveyed between baseline to interim Feb 2014-June 2016, using a portfolio of health, nutrition, and WASH practices. Significant improvement in average Women’s Dietary Diversity Score (WDDS) statistically significant increase from baseline (3.1 to 3.4). Overall, average crop production was in a significant increase from baseline (658 kg to 978 kg per household) (including sorghum, millet and groundnuts). With respect to Infant and Young Child Feeding practices (IYCF), no statistically significant change from baseline occurred, exclusive breastfeeding (46.3% to 48.4%) appropriate complementary feeding-Minimum Acceptable Diet (MAD) to children 6-23 months of age (4.1%- 5.0%),appropriate disposal of feces of children under five was changed from baseline (62% to75%), consumption of safe drinking water (12.3% to15.4%). Considering an year data evaluation, strengthening household resilience can significantly improve child nutrition status in crisis, even though more effort on IYCF practice and continuing awareness raising section, focusing on decision making, involvement of all community members are highly recommended.

**Supporting Food and Nutrition Security in Sudan Through Soybean Processing (UNIDO Project)**

**Zubeida Mohammed Elsayed**

National Center for Research and Industrial Consultancies

The Government of Sudan has prioritized agricultural and agro-industry as important income generating sector, as part of moves to shift from the sole dependence on oil revenue and to face food insecurity among vulnerable communities. Therefore, Sudan Government requested UNIDO to implement a humanitarian development project to promote local processing and consumption of soy based foods, not only to provide the emergency assistance of nutritious foods for the vulnerable communities, but also as an income generating livelihood diversification for farming communities where soy-bean can be produced.

The general objective of the soy-bean value chain development program is to assist Sudan strengthen the agro industry sector through soy-bean value addition, to support job and wealth creation in rural farming by establishment of local processing facilities for soy flour, soy milk & soy meal as means of addressing the country scarce foreign exchange. Specific objective is to assist Government of Sudan address food insecurity and malnutrition among vulnerable communities by providing soy products to various industries & open up new markets both locally and regionally. This project was implemented in phase manner, the Government of Japan approved amount of US $ 250,000 for funding of phase one and US $ 630,000 to funding of phase two.

The result of project so far was that farmers at different parts of Sudan had been acquainted with soybean production techniques, increased utilization of locally produced soybean in agro-industries among Sudanese households. The local counterparts of this project were the Ministry of Industry (MOI) and its technical research arm, the Industrial Research and Consultancy Center (IRCC), the Ministry of Agriculture and Forestry (MAF) and its research arm, Agricultural Research Corporation (ARC), National Food Research Center (NFRC), and Gazira University. Other national stakeholders included, Khartoum State Government, Poultry and Meat Producer Association, Meat Processors Association, and private sector partners (DAL Group of Companies Ltd.), GIAD Industrial Group, and Kenana Sugar Company as well.
# Biographies

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<tr>
<th>Name</th>
<th>Education/Professional Experience</th>
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Admin Assistant &English Teacher, Graduate from BSc. School of Management Studies (1998), worked at NHCTR, school of health sciences from 2004 - up-to-date asAdmin Assistant and coordinator for Post- Graduate diploma in Diabetes Education, Master degree in Peace &development form Juba University (2007), Postgraduate Diploma in English Language Teaching (2012), Master degree in English Language Teaching (2015).

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Haybat Ahmed Alsanosi Alnafar
BSc. in Family Science (Nutrition and Dietetics), University of Khartoum 2006, MSc. AUW 2016, work at Jabir Abueliz Diabetic Center Khartoum 2012, now working in Omdurman Military Hospital Omdurman, Dietitian. Training on Nutrition Survey 30 by 30 Cluster sampling and digital data gathering system using personal digital assistant (PDAs), training on community based management of severe acute malnutrition (CMAM), in emergencies (NIE) training and Prevention of Major Amputations among Diabetic patients in Sudan

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Howida Gasm Alla Abd Elaati  
Graduated from School of Family Science, AUW and Master degree in Nutrition and Dietetics, 2014, Rebait University College of Medicine, working as part-timer Ahfad University for Women.

Huda Ibrahim Ahmed Abdelmageed  
Assistant Professor in Community Health on peer education and exclusive breast feeding and child health. BSC Family Science, Ahfad University, June 1989. MSc. degree in Health Education, Gezira University, 2006. The role of health education on attitude & practices of mothers towards feeding of under five children.

Manal Abdeen Mohamed Ali  
Assistant Professor in Human Nutrition, School of Health Sciences, AUW, coordinator for School Graduate Studies, Lecturer the Food Hygiene at National Ribat University, Dean of School of Health Sciences from September 2013 to May 2016, Since June 2016 the Director of Nutrition and Health Center for Training and Research.

Mohamed Zaien  
Professor of Food Science and Nutrition, Nutrition Centre for Training and Research, School of Health Sciences, AUW. University of Khartoum B Sc Hon. (1978), M Sc (1980).University of Reading Ph D (1984). Courses in Fermentation Technology (ODA, U.K.), Industrial Biotechnology (GBF, Braunchweig, Germany), Advanced Microbiological Identification Systems on Industrial Applications of miniVidas and ATB in microbial identification of food and human pathogens (BioMerieux SA, Marcy L’ Etoile, France). Teaching of different courses in food science and nutrition such as food and dairy microbiology, fermentation biotechnology and functional foods in Universities. Applied research in using gum Arabic as a prebiotic for strains of probiotic in fermentation. Experience in teaching, training, research, food processing in the fields of food science, nutrition, food and dairy microbiology, fermentation biotechnology, quality control and laboratory technology in research institutes, academics, and regulatory and quality control laboratories. Coordinated curriculum development in food and nutrition in universities of Gezira, United Arab Emirates and Qatar. Published over 25 peer reviewed papers. Consultant for different projects with UNICEF, WFP, FAO and to local food industry.

Nada Eltayeb Abdelrahman Elnaim  
Nutrition Manager, Almanar Voluntary Organization, Sudan. Graduate from Ahfad University for Women 2000, School of Health Science, Master of Human Nutrition 2007, Ahfad University for Women.
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<tr>
<td><strong>Nagwan Abdelhamid Mahmoud Shamseldin</strong></td>
<td><strong>Phd. Education Psychology- African International University, Theses: Evaluating Special Education Services in Sudan –Master in Curriculum Development : Faculty of Education- Khartoum University. Theses: Development of Educational Program for Integrating Blind Children in preschools, teaching experience in Psychology &amp; Special Education at the university level, inside and outside Sudan. In addition, vast working experience and expertise, in the formal and informal sectors, in the areas of community development and social welfare with special focus in the following areas: Strategic planning for Family and Child Welfare, Gender &amp; Development; Initiation and establishment of pilot projects on vocational training for the disabled people, the development of production workshops and community based rehabilitation (CBR) programs; Implementation of pilot programs for mainstreaming Blind and Mentally Disabled children in Preschools; leadership training for Blind African women in some African countries, (Malawi, Mauritius, Morocco, Mauritania and Tanzania).</strong></td>
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<td><strong>Rawda Yassin Sharief Ibrahim</strong></td>
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Sidiga Abdelrahim Washi
Professor of Family and Consumer Sciences/Community Nutrition and former Dean of the School of Family/Health Sciences at Ahfad University for Women-Sudan. She earned her MSc. and PhD. degrees from Iowa State University. She is currently directing the Quality Assurance and Institutional Assessment (QAIA) Office at Ahfad University for Women, Sudan. She is involved in scholarly teaching, curriculum development and research. She served in many leadership positions and was currently elected as the President of the International Federation for Home Economics (IFHE). Prof. Washi has published over 30 articles in refereed Journals, a book on Therapeutic Nutrition, 2 chapters and 5 articles in books and 20 Professional papers in Conference proceedings. She has carried out 10 major research projects of which Nutrition of School children is her focus. Prof. Washi is an international trained visionary leader in population, reproductive health and nutrition and was trained as a woman Leader in the New World at the Keneddy School of Government at Harvard University in the US. Prof Washi was a Member at Large of the Executive office of the Middle East and North Africa Nutrition Association (MENANA) Cairo, Egypt 2006-2008.

Somaya El Bashir El Tayeb

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Umsalama Ibrahim Eidam
PhD. in Nutrition in 2013, and MSc. in Human nutrition in 2003, from Ahfad University for Women. BSc. in Biochemistry from Faculty of Science- University of King Saud University in 1990. 1997-2001-Working as Teaching Assistant in Nyala University. 2003-2008-Working as Head of Educational Sciences department in Educational Faculty in Nyala University. 2003-2008-Working as lecturer in Educational Faculty in Nyala University. 2014 till now Working as Assistant Professor in Educational Faculty in Nyala University, teaching Nutrition, Family Sciences and Biochemistry courses.
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<tr>
<th><strong>Wafaa Badwi Abdalla</strong></th>
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<th><strong>Wafaa Mohammed Ahmed Elbadawi</strong></th>
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<th><strong>Talal Mahgoub</strong></th>
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<tbody>
<tr>
<td>Fourteen years of experience in national and international development and humanitarian assistance in the area of management of nutrition both prevention and curative programming. Possesses strong skills in Policies and strategies development, program management, social marketing, resources mobilization, emergency preparedness/response, early recovery and development for nutrition projects and nutrition interventions with a very strong communication and networking within UNICEF and among the UN agencies, government institutions, NNGOS, INGOs, donors and other related sectors at local, national and international levels, recently heavily involved in leading the nutrition prevention programming including reduction of stunting, Infant and Young child Feeding programming, as well as designing and implementation the nutrition resilience projects.</td>
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<th><strong>Marwa Abd Alkream Ahmed</strong></th>
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<tbody>
<tr>
<td>Bachelor degree from Ahfad University for Women, Human Nutrition, Hold Master degree on Public Health - policy and Management, School of Health Sciences and School of Medicine, thesis title : Assessment of knowledge attitudes and practices of mothers towards infants and young child feeding.</td>
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</tbody>
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<th><strong>Ibtihag Awad Abdalla Mahmoud,</strong></th>
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List of Committees:

1. Scientific committee
2. Logistics committee
3. Media committee
4. Financial committee

Member of Committees:

Prof. Sidiga Washi
Prof. Abdel Haleem Rahma
Prof. Mohamed Zain
Dr. Manal Abdeen
Dr. Widad Aidrous
Dr. Sumia Elsaid
Dr. Ahlam Gorafi
Uz. Sumia AlBasheer
Uz. Sawsan Balla
Uz. Ibtihag Awad
Uz. Howida GasmAllah
Uz. Wafa Albadowy
Uz. Azza Mohamed
Uz. Eman Dulman
Uz. Salma Ali
Thanks

SAMIL Industrial Company

Dr. Abderhman Abass

Uz. Ibtisam Mohamed Juma

Wheata Ind. Co. Ltd.

Zain Group

Dr. Aziza Mokhair

Uz. Abdel Azeem Hassan
Alhanaa Press

Dr. Omiema Salih

Saeed Food Factory

Uz. Ali Zouhair – Alhoria Press