i C-MAMI TOOL V2.0

1. TRIAGE: CHECK FOR SIGNS AND SYMPTOMS FOR REFERRAL TO INPATIENT CARE

ASSESS	CLASSIFY	ACT (MANAGE)	
Infant CHECK for General Danger Signs ¹	INFANT/MOTHER: NUTRITIONALLY VULNERABLE WITH MEDICAL COMPLICATIONS - HIGH NUTRITIONAL RISK OR VERY SEVERE DISEASE	URGENT referral to Inpatient Care	
 Ask / Listen / Look / Feel Ask: Is the infant able to drink or breastfeed? Ask: Does the infant vomit everything? Ask: Has the infant had convulsions? Look: Is the infant convulsing now? Look: Is the infant lethargic or unconscious? 	If any of the following are present for Infant: General Danger Signs Unable to feed Vomits everything Had fit (convulsions) Movement only when No movement (unconscious) stimulated (lethargic)	Pre-referral actions: Infant Provide any appropriate pre-referral treatment Show the mother how to keep the infant warm on the way to the hospital or clinic Provide skin-to-skin contact OR	
Look and count the breaths in one minute. Look: Does infant have lower chest wall in-drawing?	Difficulty breathing Fast breathing infant 0-1 months: ≥60 breaths/min infant 2-5 months: ≥50 breaths/min Lower chest wall in-drawing Grunting³	• Keep the infant clothed or covered as much as possible all of the time. Dress the young infant with extra clothing including hat, gloves, socks and wrap the infant in a soft dry cloth and cover with a blanket If child is very hot, ask mother to remove outer clothing and leave infant in underwear	
 Ask: Does the infant have diarrhoea?⁴ Look: Does the infant have sunken eyes? Ask: Are infant's eyes recently sunken or look worse than yesterday? Pinch the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds) 	Diarrhoea Has diarrhoea Sunken eyes Skin pinch goes back very slowly (>2 sec.)	 For breastfed infant, encourage breastfeeding before transfer and on the way if infant has an appetite For non-breastfed infant, ensure the mother has appropriate feeding supplies and encourage to feed before transfer and 	
 Feel: Does the infant have a fever (hot)?⁵ Does the infant have low body temperature (feels cool)? Measure temperature under the armpit if you have a thermometer 	Feels hot: ≥37.5°C Feels cold: <35.5°C	on the way if the infant has appetite	
 Infant: Check for jaundice Look for jaundice. Does the infant have yellow eyes or skin? Look at the young infant's palms and soles. Are they yellow 	Jaundice Age <24 hours: any jaundice Age >24 hours: jaundice hands & feet		

See videos as part of newborn and small baby series (Global Health Media) that include: 'Danger Signs for Health Workers' and 'Fast Breathing as a Single Sign of Illness', www.globalhealthmedia.org/videos/. Also see short videos (Medical Aid Films) at www.medicalaidfilms.org. Note that in acutely malnourished infants, usual clinical signs may be absent or reduced. It is essential to consider the full clinical picture and history in assessment.

² Lower chest wall in-drawing is when the lower chest wall goes in when

the child breathes in; if only the soft tissue between the ribs or above the clavicle goes in when a child breathes, this is not lower chest in drawing (it is recession). See 'Danger Signs for Health Workers' for video (footnote 1).

³ Grunting is a short, hoarse sound at the end of expiration (when the child breathes out) and is a sign of moderate to severe respiratory distress in young infants and children with lower airway disease, such as pneumonia, lung collapse (atelectasis) or fluid in the lungs (pulmonary

oedema). See 'Danger Signs for Health Workers' for video (footnote 1).

Diarrhoea: for infants older than 1 month, 3 or more abnormally loose or watery stools per 24 hours [Note: breastfed infants up to 1 month of age can have a stool after every breastfeed].

⁵ IMCI for young infant says: "if you do not have a thermometer, feel the infant's abdomen or armpit and determine if it feels hot or unusually cold".

ASSESS	CLASSIFY	ACT (MANAGE)	
Infant CHECK for General Danger Signs	INFANT/MOTHER: NUTRITIONALLY VULNERABLE WITH MEDICAL COMPLICATIONS - HIGH NUTRITIONAL RISK ORVERY SEVERE DISEASE	URGENT referral to Inpatient Care	
Infant: Check for severe pallor/anaemia Look at infant's hands. Are the palms very pale/white?	Severe pallor/anaemia Very pale or white palms		
 Mother: Check at for pallor/anaemia⁶ Test for Hb via Hemocue or similar Look at mother's hands: Are her palms very pale/white? Look at eyes: Are inside of eyelids pale? 	Mother: Anaemia Hemocue or similar test indicates anaemia Very pale or white palms Pale inside of eyelids (conjunctiva)		
Infant: Check for complications that make feeding difficult (see 2nd Column)	If Infant has any of the following that make feeding difficult Cleft lip or palate (feel inside mouth to check palate) Tongue tie Abnormal tone or posture Excessively open/clenched jaw Unable to support head or poor trunk control When held, infant's arms and legs fall to the sides Infant's body stiff, hard to move Coughing and eye tearing while feeding (signs of unsafe swallowing)	Specialist referral for more detailed assessment and treatment of any structural or disability problem that should include special feeding support	
 Infant: Anthropometric/Nutritional Assessment Look for pitting oedema of both feet Measure weight and length and determine weight-for-age (WFA)⁷ and weight-for-length (WFL) where calculable Record Mid Upper Arm Circumference (MUAC) for all infants (to help build evidence)⁸ Ask & Listen: Have you noticed your infant losing weight? For how long? 	Infant < -2 WFA OR < -2 WFL OR Bilateral pitting oedema +, ++ and +++9 OR Failure to respond to previous outpatient-based nutritional care (infant or mother) AND any one of the following Recent severe weight loss (within 1 week) ¹⁰ Prolonged (weeks) failure to gain weight Sharp drop across growth chart centile line MUAC: mm (record to help build evidence)		

⁶ WHO cut-offs vary when pregnant and not pregnant and pregnancy defined until 6 weeks post-partum.

Recent evidence has shown that WFA can help identify underweight infants who are also at higher risk to mortality. WFA is therefore used as a criterion for enrolment of nutritionally vulnerable infants under 6 months. A cut-off of WFA <-2 is used to ensure consistency with WFL cut-offs.</p>

⁸ There is recent growing evidence on the use of MUAC to identify acute malnutrition and nutrition vulnerability in infants under 6 months.

However, a nutrition classification cutoff has not yet been established. Countries and programmes are encouraged to collect MUAC data for infants under 6 months to help build the evidence base for cutoffs and case management.

⁹ Nutritional oedema is rare in infants and therefore infants with oedema should always be admitted to in-patient care to investigate possible underlying medical cause. (feet, legs, whole body). Grade + Mild: Both feet/ankles; Grade ++ Moderate: Both feet, plus lower legs, hands or lower

arms; ${\bf Grade}$ +++ ${\bf Severe}$: Generalised bilateral pitting oedema, including both feet, legs, arms and face

¹⁰ In many settings, it can be difficult for a health worker or mother to detect acute weight loss in an infant. Where reported or detected, weight loss in infants should be interpreted alongside the general clinical condition; "lost more than 10% of previous weight".

ASSESS	CLASSIFY	ACT (MANAGE)
Infant CHECK for General Danger Signs	INFANT/MOTHER: NUTRITIONALLY VULNERABLE WITH MEDICAL COMPLICATIONS - HIGH NUTRITIONAL RISK ORVERY SEVERE DISEASE	URGENT referral to Inpatient Care
Mother: Anthropometric/ Nutritional Assessment Look for pitting oedema of both feet (if mother not pregnant) Measure MUAC (always)	Mother MUAC: <190 mm MUAC: mm (record to help build evidence) OR Bilateral pitting oedema (if mother not pregnant)	
MOTHER	MOTHER: SEVERE DEPRESSION	URGENT referral to Inpatient Care
Mother: Maternal Mental Health¹¹ Observe the mother's responses and behaviours • Listen & Look: Does it appear that mother is out of touch with reality or what is happening in the assessment (e.g. not responding appropriately during the assessment)? • Listen & Look: Does the infant appear to be at risk from the mother's behaviour? (for example: mother shows no concern for infant, or wilful neglect of infant, such as prolonged period of no eye contact or no physical contact with infant) There are many daily tasks a mother does to care for her infant and family (for example: washing, cooking). • Ask & Listen: What are some of the most important things you do for your infant and family? • Ask & Listen: Do you ever find it difficult to do all these tasks? If Yes: Why is that? Sometimes a mother finds it difficult to do daily tasks because she is feels sad or worried. • Ask & Listen: In the last few weeks, have you been feeling: Sad? If Yes (listen for): little/some/much/most of the time? Worried? If Yes (listen for): little/some/much/most of the time? • Ask & Listen: Are there times you experience so much pain that it interferes with your ability to carry out daily tasks? • Ask & Listen: If Yes (listen for): Does this happen rarely/some/often/most of the time? If mother answers yes to either of questions above, then ask: • Ask & Listen: What are the problems that you are feeling sad or worried about? Sometimes when a person feels sad or worried she may have thoughts of harming herself or her infant. • Ask & Listen: Do you have any thoughts like that? Sometimes a person feels very sad or worried because her husband/partner (or someone else in the family) is hitting or beating her. • Ask & Listen: Is that happening to you?	Any of the following: Mother appears to be out of touch with reality or with what is happening in the assessment OR Infant appears to be at risk from the mother's behaviour. [Mother may have a severe mental, neurological or substance use disorder] OR Mother finds it difficult to carry out daily tasks necessary to care for her infant OR Mother feels body pain most of time OR Mother feels very sad or worried much of time List problems mother is feeling sad or worried about: [Mother is severely anxious, depressed, traumatised, or otherwise in emotional crisis] Mother has thoughts of harming herself or infant OR Mother expresses fear of physical harm to herself or infant from her partner or another person OR Mother or infant has experienced physical harm from her partner or another person [Mother and/or infant are at risk of harm from mother herself or other individual]	 Explain to supervisor that you are concerned about the mother/infant's safety and want to connect mother with the best care available Assess safety of family situation and link with other potential caregivers for immediate care of mother and infant Supervisors identify priority actions in partnership with Mental Health and Psychosocial Support (MHPSS) services and Child Protection services as appropriate Follow up on referral to ensure safety and potential of enrolment in C-MAMI upon improvement of symptoms

¹¹ Questions are sensitive and context specific. Work with staff to decide together what works best in your particular situation.

2. FEEDING ASSESSMENT

ASSESS	CLASSIFY	ACT (MANAGE)	CLASSIFY	ACT (MANAGE)
Breastfed Infant and Mother	Moderate Feeding Problem: C-MAMI criteria	C-MAMI Enrolment (Outpatient): Infant-Mother Pair	No Feeding Problem: C-MAMI criteria	Home Care
Breastfed Infant Look: Is the infant well attached? Mouth wide open Lower lip turned outwards Chin touching breast More areola above than below nipple Look: Is the infant suckling effectively? Slow deep sucks Pausing Audible swallowing Ask & Listen: Find out how many breastfeeds in 24 hours Ask & Listen: Does the infant receives plain water, other liquids or foods? Ask & Listen: Does the infant refuse to breastfeed? Look for thrush in infant's mouth	Any of the following Not well attached to the breast Not suckling effectively 8 breastfeeds in 24 hours Receives plain water, other liquids or foods Refuses to breastfeed Check for oral thrush (candida)	Refer to Breastfeeding Counselling and Support Actions Attachment: Section A: 1 Effectively suckling: Section A: 2 Frequency of breastfeeds: Section A3 Exclusive breastfeeding: Section A: 4 Oral thrush (candida): Section A: 11 AND Plot and examine growth chart to monitor progress, including birth weight, if available	Well Attached: all the following Mouth wide open Lower lip turned outwards Chin touching breast More areola above than below nipple AND Suckling well: all the following Slow deep sucks Pausing Audible swallowing AND ≥8 in 24 hours AND No plain water/ liquids/foods AND No thrush in infant's mouth	Praise, support, reassure General advice/counselling on: general age appropriate feeding and nutrition recommendations routine healthcare services e.g. vaccinations, growth monitoring Advise to return if new problem develops
 Mother Listen: Find out if the mother thinks she hasn't enough breast milk Listen: Find out if the mother lacks confidence about feeding Breast Condition: identify any of the following Ask & Look: Engorgement Ask & Look: Sore & cracked nipples Ask & Look: Plugged ducts Ask & Look: Mastitis Ask & Look: Flat, inverted, large or long nipples Ask & Look: Itching of nipples or breasts (thrush) 	Mother: either of the following Perception of not having enough breast milk Lack of confidence about feeding OR Breast Condition: any of the following Engorgement Sore & cracked nipples Plugged ducts Mastitis Flat, inverted, large or long nipples Itching of nipples or breasts (thrush)	Mother Perception of not having enough breast milk: Section A: 5 Lack of confidence about feeding: Section A: 6 Breast Condition Engorgement: Section A: 7 Sore & cracked nipples: Section A: 8 Plugged ducts: Section A: 9 Mastitis: Section A: 9 Flat, inverted, large or long nipples: Section A: 10 Thrush: Section A: 12	Mother Confident about infant condition, and breastfeeding Reports no breastfeeding problem and no concern	Praise, support, reassure General advice/ counselling on: general age appropriate feeding and nutrition recommendations routine healthcare services e.g. vaccinations, growth monitoring Advise to return if new problem develops

Other concerns: any of the following • Ask & Listen: Do you think your infant was born too early? or too small? • Ask & Listen: How do you feel about your infant's weight gain/growth? • Ask & Listen: Are you working away from infant or separated from him/her? • Ask & Listen: Do you have concerns about your own diet? • Ask & Listen: Other (dealing with different feeding practices of mother-in-law, father, family)? • Ask & Listen: Any other problem or concern?	OR Other concerns: any of the following Preterm or low birth weight Lack of confidence about infant weight gain/growth Working away or separated from infant Concerns about own diet Other (dealing with different feeding practices of mother-in-law, father, family) Note problem/concern:	Other concerns Preterm or low birth weight: Section A: 13 Lack of confidence about infant weight gain/growth: Section A: 14 Working away from her infant: Section A: 15-16 Concerns about her diet: Section A: 18		
Non-breastfed Infant-Mother/ Caregiver	Moderate Feeding Problem: C-MAMI criteria	C-MAMI Enrolment (Outpatient): Infant-Mother Pair	No Feeding Problem: C-MAMI criteria	Home Care
 Ask & Listen: Is mother the main caregiver for infant? Ask & Listen: Did mother ever breastfed? When did she stop and why? Ask & Listen: Is mother interested in relactating? Ask & Listen: Is caregiver interested in wet nursing? Ask & Listen: What is the type/source of breast milk substitute (BMS) used? Ask & Listen: How do you prepare the BMS used? Ask & Listen: How much BMS is consumed per 24 hours? Ask & Listen: Is infant refusing feeds? Ask & Listen: Does infant receive other drinks or foods in addition to BMS? Ask & Listen: What feeding utensils does infant use? Ask & Listen: Any problems or concerns? Ask & Listen: Do you have the fuel/equipment available to clean and sterilize? 	In non-breastfed infant: any of the following If appropriate note why the mother stopped breastfeeding Mother present and interested in relactating Mother absent but caregiver interested in relactation or wet nursing Inappropriate BMS being used Consumes less than 500ml of BMS per 24 hours Refusing feeds Receives other drinks or foods in addition to BMS Feeding bottle used Does not practice good hygiene in feed preparation Note problem/concern:	In non-breastfed infant Non-breastfeeding counselling and support actions: Section C: 1-4 Interest in relactating: Section C: 1-4 Supplementary suckling support: Section B Preparing infant formula: Section C: 3-4	In non-breastfed infant: Mother relactating OR Infant fed by wet nurse OR: all the following for infant fed with BMS Appropriate BMS being used being used being used AND Consumes at least 500ml of BMS per 24 hours AND Feeds well AND Receives only BMS AND Practices good hygiene Mother/Caregiver Confident about infant condition, feeding and home management Reports no feeding problem and no concern	Praise, support, reassure General advice/counselling on: general age appropriate feeding and nutrition recommendations routine healthcare services e.g. vaccinations, growth monitoring Advise to return if new problem develops

Infant Underlying clinical problems or Infant: any of the following Praise, support, Twin birth: Section A: 19 Twin birth issues that may affect feeding reassure Adolescent mother (<19 years): Section A: 20 Adolescent mother (<19 years) Is this infant a twin? General advice/ Tested HIV positive: investigate and treat as • What is mother's age? Tested HIV positive counselling on: per national / local guidelines: Section A: 21 • Has the mother or prospective On ART - general age appropriate feeding wet nurse or infant had an HIV **Mother/Wet-nurse** Mother or prospective wet nurse: any and nutrition test? Tested HIV positive: investigate and treat as of the following recommendations per national/local guidelines If tested HIV positive and Tested HIV positive - routine healthcare Ensure mother/wet-nurse is referred for or breastfeeding: is the mother and On ART services e.g. receiving appropriate treatment infant on anti-retroviral treatment Note problem/concern: vaccinations, growth (antiretroviral drugs for HIV) (ART)? monitoring Emphasise importance of adherence to ART Advise to return if new for mother/wet-nurse's health and to problem develops reduce HIV transmission risk to infant

3. ANTHROPOMETRIC / NUTRITIONAL ASSESSMENT

Infant/Mother INFANT: NUTRITIONALLY VULNERABLE INFANTS WITHOUT MEDICAL COMPLICATIONS (MODERATE NUTRITIONAL RISK) OR MOTHER: MODERATE NUTRITIONAL RISK) OR MOTHER: MODERATE NUTRITIONAL RISK Obtain infant age (in completed months). Measure weight and length and determine weight-forage z-score (WFA)¹² and weight-for-length z-score (WFL) where calculable. NOTE: clinical assessment for visible wasting is not a reliable substitute for anthropometry and will result in cases being missed. It should only be done where length is <45cm and WFL cannot be calculated. Record Mid Upper Arm Circumference (MUAC) for all infants (to help build evidence)¹¹ INFANT: NUTRITIONALLY VULNERABLE Infant-Mother Pair C-MAMI outpatient enrolment: Infant-Mother Pair Infant-Mother Pair No C-MAMI enrolment for Infant-Mother Pair No C-MAMI enrolment for Infant-Mother Pair Infant Both Clinically well Alert AND One of the following 2 WFA OR2 WFA OR2 WFA OR2 WFL OR: any of the following2 WFA OR2 WFL OR: any of the following2 WFA OR2 WFL OR: any of the following2 WFL OR: any of the followin	ASSESS	CLASSIFY	ACT (MANAGE)	CLASSIFY	ACT (MANAGE)
Obtain infant age (in completed months). Measure weight and length and determine weight-forage z-score (WFA)¹² and weight-forage z-score (WFA)¹² and weight-for-length z-score (WFA)¹² and weight-for-length z-score (WFL) where calculable. NOTE: clinical assessment for visible wasting is not a reliable substitute for anthropometry and will result in cases being missed. It should only be done where length is <45cm and WFL cannot be calculated. Record Mid Upper Arm Circumference (MUAC) for all infants (to help build evidence)¹³ MUAC: mm (record to help build evidence)¹³ Moderate weight and length and determine weight-forage in the following Alert AND Sestation age at birth if available Gestation age at birth if available Growth trend if previous data available Provide age- and status-appropriate Provide age- and status-appropriate Provide course of broad-spectrum oral antibiotic, such as amoxicillin (for infant) - check local guidelines MUAC: mm (record to help build evidence) AND Infant gaining weight AND In	Infant/Mother	INFANTS WITHOUT MEDICAL COMPLICATIONS (MODERATE NUTRITIONAL RISK) OR			
Cont'd next page	 Obtain infant age (in completed months). Measure weight and length and determine weight-forage z-score (WFA)¹² and weight-for-length z-score (WFL) where calculable. NOTE: clinical assessment for visible wasting is not a reliable substitute for anthropometry and will result in cases being missed. It should only be done where length is <45cm and WFL cannot be calculated. Record Mid Upper Arm Circumference (MUAC) for all infants 	Both Clinically well Alert AND One of the following <-2 WFA OR <-2 WFL OR: any of the following Moderate weight loss (within a few days) Recent (days-weeks) failure to gain weight Moderate drop across growth chart centile lines	malnutrition and discuss action(s) to address these Plot & examine growth chart to monitor progress including Birth weight if available Gestation age at birth if available Growth trend if previous data available Provide age- and status-appropriate nutrition/feeding advice Provide course of broad-spectrum oral antibiotic, such as amoxicillin (for infant) – check local guidelines Follow-up Provide follow-up in 1 week to monitor	Both Clinically well Alert AND ≥-2 WFA OR ≥-2 WFL AND Infant gaining weight MUAC: mm (record to help	reassure General advice/ counselling on: - general age appropriate feeding and nutrition recommendations - routine healthcare services e.g. vaccinations, growth monitoring Advise to return if new problem develops

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a nutrition classification cutoff has not yet been established. Countries and programmes are encouraged to collect MUAC data for infants under 6 months to help build the evidence base for cutoffs and case management.

A cut-off of WFA <-2 is used to ensure consistency with WFL cut-offs.

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Mother • Measure MUAC (always) Mother Anthropometry assessment MUAC ≥ 190mm and <230 mm MUAC: mm (record to help build evidence)	up in Mother Anthropometry assessment MUAC ≥230 mm MUAC: mm (record to help build evidence)	No C-MAMI enrolment for Infant-Mother Pair Praise, support, reassure General advice / counselling on: age- and status-appropriate feeding and nutrition recommendations routine healthcare services Advise to return if new problem develops
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4. MATERNAL MENTAL HEALTH ASSESSSMENT

ASSESS	CLASSIFY	ACT (MANAGE)	CLASSIFY	ACT (MANAGE)
Mother	MOTHER: MODERATE MATERNAL MENTAL DEPRESSION/ ANXIETY/ DISTRESS	C-MAMI outpatient enrolment: Infant-Mother Pair	MOTHER: NO MATERNAL MENTAL DEPRESSION/ ANXIETY/ DISTRESS	No C-MAMI enrolment for Infant- Mother Pair
On some or most days in the last 2 weeks: • Ask & Listen: Have you felt unable to stop worrying or thinking too much? • Ask & Listen: Have you been sad or worried?	If mother answers yes to 1-2 of the questions, then enrol in C-MAMI Mother felt unable to stop worrying or thinking too much Mother has been sad or worried (Mother has symptoms of anxiety, depression, or stress that impacts daily functions)	Ask mothers about their concerns Listen to mothers and help them feel calm Help mothers to find solutions and link to resources to address basic needs Help connect mothers to information / help to prevent further harm	Mother has limited / no symptoms of anxiety, depression, or stress that impacts daily functions	Praise, support, reassure General advice / counselling on: care and nutrition recommendations during pregnancy, lactation and
Social support Ask & Listen: Do you have enough food to feed your family daily? If No: Are you registered in any food-related services: general food distribution (GFD), supplementary feeding programme (SFP), targeted cash/voucher schemes, social protection schemes, etc.? Ask & Listen: Have you attended health services when you felt you needed to or have been referred? Ask & Listen: Do you attend health education sessions, support groups in your community or facility or receive education through community outreach workers?	Lack of care and social support Not enough food to feed family Not registered in any food- related services: GFD, SFP, targeted cash/voucher schemes, social protection schemes, etc. OR Does not attend the health services when needed or referred OR Does not attend health education sessions, support groups in community or facility or receive education through community outreach workers	Link and refer with appropriate institutional care / services (e.g. Health facility, Mental Health of Psychosocial support programme, Protection programmes / Gender based violence / GBV response programmes) If not attending health services or education sessions refer to Support during breastfeeding or for non-breastfeeding mother: Section C: 1-4 / caregiver: Section D: 1-4 Organise meetings at which caregivers can discuss their lives, share problem-solving and support one another in caring effectively for their infants Group support: Section D: 1-2 Family/partner support: Section D: 3 Community support: Section D: 4 Identify local human resources (e.g. community leaders, elders, health workers, teachers, women's group) In follow up visits, attempt to meet with people who have been named and ask if they can help When local support systems are weak, consider establishing support groups linking MAMI mothers ("current" and "graduated")	Adequate care and social support Existing social support / cohesion / belonging Registered in food-related services: GFD, SFP, targeted cash/voucher schemes, social protection schemes, etc. Attends the health services when needed or referred Attends health education sessions or support groups in community or facility	adolescence routine healthcare services Advise to return if new problem develops

¹⁴ This is context specific. Local adaptation may be needed depending on food security issues in the community and availability of programmes to refer to.