

Improving food security in humanitarian settings: An evidence gap map

Appendices

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List of Appendices

Appendix 1. Scope and detailed intervention categories	1
Appendix 2. Search methods	6
2.1. Electronic database searches	6
2.2. Citation tracking.....	14
2.3. Searching other resources.....	15
Appendix 3. Details of process for selection of studies	16
Linked studies	18
Forwards and Backwards Citation Tracking.....	18
Appendix 4. Examples of records excluded from this EGM for different criteria	19
Appendix 5. List of included papers	21
5.1 List of included impact evaluations	21
5.2 List of included systematic reviews	40
Appendix 6. Data extraction and management	44
6.1. Dealing with multicomponent interventions	52
6.2. Dealing with missing data.....	52
Appendix 7. Vulnerability and food insecurity of countries.....	53
Appendix 8. Characteristics of the included systematic reviews.....	58
Appendices References	60

APPENDIX 1. SCOPE AND DETAILED INTERVENTION CATEGORIES

The scope of the interventions selected for this evidence gap map (EGM) were developed in consultation with USAID’s Bureau for Humanitarian Assistance (BHA), as well as other relevant practitioners. As part of the stakeholder engagement process for the Humanitarian Assistance Evidence Cycle (HAEC) EGM, the International Initiative for Impact Evaluation (3ie) engaged in three separate activities to ensure the project was both funder and practitioner relevant.

1. Initially, the scope of the EGM was developed by 3ie with the support of TANGO International and Causal Design, partners of the HAEC award. The scope of the EGM was then shared with relevant practitioners as part of HAEC’s wider consultation process. A wide range of stakeholders were contacted in order to ensure the project itself was relevant to the wider humanitarian community. Practitioners from five organizations, such as Save the Children, International Medical Corps and World Vision, provided written feedback (Appendix Table 1).

Appendix Table 1. List of practitioners who provided feedback on the scope of the project

Name	Organization	Role
John Mulqueen	CRS	Program Manager
Jennifer Majer	International Medical Corps	MEAL Advisor
Seth Abu-Bonsrah	World Vision	Program Manager
Qundeel Hattek	Save the Children	Acting Senior Director for Humanitarian MERLA
Chidinma Ottah	Mercy Corps (formerly)	

2. A meeting was held with the funder, BHA, to ensure that the framework created was in line with their programmatic activities. The HAEC EGM evolved into a multi-sectoral piece of work and as such a number of individuals from different technical areas were invited to provide feedback on the framework (Appendix Table 2).

Appendix Table 2. List of personnel who provided feedback on the framework

Name	Organization	Technical area
John Lamm	BHA	Markets
Laura Meissner	BHA	Markets
Rex Ukaejiofo	BHA	Agriculture
Andrew Levin	BHA	Agriculture
Amy Mintz	BHA	DRR
Precious Sancho	BHA	WASH
Maggie Holmesheoran	BHA	Nutrition
Arif Rashid	BHA	DMEAL
Manoj Khadka	BHA	M&E
Brendan Tuttle	BHA	Applied Learning
Leah Beth Miller	BHA	Nat Haz DRR
Dan Houston	BHA	
Adam Trowbridge	BHA	M&E
Mara Mordini	BHA	M&E

3. Finally, a meeting was held with the five practitioners who provided written feedback in step one. This was a final validation call to present the scope of the EGM which had been revised based on BHA feedback. BHA then provided the final approval of the EGM's interventions and outcomes.

Appendix Table 3. List of included interventions and sub-categories of interventions

Intervention type	Intervention sub-categories	Definition
Early warning systems	Early warning systems	Early warning systems are integrated systems for monitoring, collecting data, analyzing, interpreting, and communicating information about the likelihood and risk of meteorological and other events.
Interventions pre-arranging household finance for disasters	Savings Interventions	The creation of collectives and community-based savings organizations before the onset of an emergency.
	Contingent Credit	Interventions that provide guaranteed credit, with arrangements being triggered by a disaster.
	Insurance and other risk transfers	Interventions providing or promoting the uptake of disaster insurance and other risk-sharing products (such as index-based risk transfers).
	Forecast based finance	Interventions that provide cash and in-kind transfers, with arrangements being triggered based on data showing an emergency event is likely to occur.
Agriculture and livestock interventions	Destocking	Commercial destocking refers to support which brings together traders and facilitates the sale and trade of livestock to alleviate the pressure on scarce resources. Slaughter destocking is the humane slaughter of livestock when farmers are unable to keep up support. If the livestock is an appropriate condition, the meat is then distributed to the affected community.
	Livestock provision	The direct provision of livestock. The extent of the provision can depend on the needs of the affected community, for instance pastoralists may be more at risk than smallholder farmers who rear livestock as an additional income generating activity.
	Veterinary support	The provision of veterinary services during an emergency. Services provided can identify and treat livestock diseases, provide vaccinations and medications to prevent disease outbreaks, and to reduce mortality and prolong the lives of important but vulnerable livestock. Veterinary training is also included here.
	Provision and access to emergency livestock feed	The distribution of livestock feed. This can be delivered to an individual or household. Alternatively, feed camps can be set up where individuals will bring their livestock to feed in a designated space.

Intervention type	Intervention sub-categories	Definition
	Provision and access to seeds	The direct provision, or provision of cash, vouchers and subsidies for seeds either directly or through seed fairs. Often new and improved seed varieties are distributed, those with attributes to improve resilience, such as drought-tolerant varieties.
	Provision and access to agricultural technologies	The direct provision, or provision of cash, vouchers and subsidies for agricultural technologies. These technologies include tools and machinery.
	Provision and access to fertilizers	The direct provision, or provision of cash, vouchers and subsidies for fertilizer.
	Provision and access to water for livestock and irrigation	Interventions that provide improved water access for livestock and irrigation. Interventions included here are focused on the supply of water to help ensure livestock are safe and agricultural production continues. If the water being provided does not have the explicit purpose of use in farming, then it is excluded here. Multiple use water sources are also excluded.
	Provision and access to safe shelter, settlement, and storage of agricultural products and livestock	The direct provision, or provision of cash, vouchers, and subsidies for inputs to create safe storage and shelter of livestock and agricultural products. The use of animal housings and seed storage facilities allow farmers to ensure their assets are protected. This includes storage at both the household and community level.
	Capacity building for agriculture	All interventions that provide farmers with information and knowledge on agriculture techniques. Knowledge can be disseminated through a variety of means and included here are farmer field schools, SMS reminders and the utilization of trained agents.
	Capacity building for animal husbandry	All interventions that provide farmers with information and knowledge on animal husbandry. Knowledge can be disseminated through a variety of means and included here are farmer field schools, SMS reminders and the utilization of trained agents.
	Pest and disease control	The direct provision, or provision of cash, vouchers and subsidies for pesticides or control accessories, as well as the creation of disease surveillance systems. Surveillance systems include support for the searching, reporting, and mapping of agricultural diseases. This includes public awareness campaigns, integrated pest management systems, and training.

Intervention type	Intervention sub-categories	Definition
Food, cash, and other in-kind transfers	Direct provision of food	All interventions which provide individuals and households with food. This includes the provision of uncooked foods on a monthly basis, as well as variants such as Ready-to-Eat Rations (composed of foods that do not require much preparation and suitable to the needs of a mobile population) or Food Kits (composed of dry goods but designed to cover less than a month's needs).
	Cash transfers	The provision of conditional, unconditional, restricted, or unrestricted cash transfers. Cash for use of purchasing agriculture or livestock goods, food supplements, or infrastructure for a business, are included elsewhere in their respective intervention categories. Any transfer conditional on work are included elsewhere in the for-work intervention category.
	Other in-kind transfer	The provision of in-kind transfers for a good other than food to individuals and households. This includes the provision of non-food items (NFIs) such as blankets, cooking equipment and hygiene kits.
	Food vouchers	The provision of vouchers which allow recipients access to a specific and predefined range of foods. Vouchers can be denominated in either monetary terms or physical quantities of commodities. Traders are able to reclaim the vouchers at banks or with the implementing agency.
	Other vouchers	The provision of vouchers for goods other than foods. This includes vouchers for NFIs.
	For-work interventions	For-work interventions provide individuals with cash, food or other in-kind transfer in return for employment.
Nutrition interventions	Protection and promotion of nutritional status	Any transfer, including in-kind and cash, which provide households or individuals with food or supplements which can protect and promote the nutritional status of a non-acutely malnourished individual. Examples of interventions include supplementary feeding programs (FSP) which directly provide supplements to individuals and households and micronutrient supplementation campaigns.
	Treatment of malnutrition	The provision of treatment for malnutrition. This also includes cash, vouchers and subsidies to support access to treatment.
	Nutrition education and support	Interventions which provide individuals and households with information and knowledge on nutrition. Knowledge can be disseminated through a variety of means and is often led by community health workers. This includes behavioral change communication

Intervention type	Intervention sub-categories	Definition
		interventions on nutrition subjects. Maternal infant and young child feeding (MIYCF) programs including counseling and support for breastfeeding and assistance with appropriate complementary feeding practices are included here.
Market-based recovery interventions	Market infrastructure rehabilitation	Rehabilitation of infrastructure to connect markets. This includes, for example, roads leading from rural communities to central markets, as well as community structures in marketplaces. These interventions provide market actors with access to the physical marketplace.
	Market access support	Interventions which provide support to connect market actors (suppliers and producers) to the physical market. This includes the provision of transport services, as well as the direct provision of grants or in-kind material (including fuel) to transporters so they can restore, develop, or strengthen the transportation services they offer to market actors.
	Direct assistance to market actors	Distributing grants, in-kind assistance, cash, or vouchers to market actors (suppliers and producers) to ensure the strength and continuation of the market system. Interventions here provide assistance that allows the market to continue to function, the goal is not to ensure households and individuals have access to an income but is instead to ensure the market continues to serve the needs of the community.
	Livelihood assistance	Distributing grants, in-kind assistance, cash, or vouchers to individuals to specifically establish or re-establish their livelihoods and businesses. Interventions here provide assistance allowing individuals to establish a source of income.
	Education and training on livelihoods	Skills development and training for individuals to restore and strengthen existing livelihoods, as well as engage in new livelihoods.
	Microfinance, community-based organizations, and collectives	The provision and creation of microfinance, community-based organizations, and collectives. Microfinance refers to the implementation of a range of small-scale financial services such as credit, and small business training, made available to vulnerable people who cannot access mainstream or formal financial institutions. The creation of collectives and community-based organizations include the establishment of non-formal, self-capitalized community-based savings groups (e.g., Village Savings and Loan Associations [VSLA]).

Intervention type	Intervention sub-categories	Definition
Water security	Extension and maintenance of water supply services	Intervention providing a new or improved water supply or distribution system for human consumption and activities related to its maintenance over time. This can include the installation of a new hand pump, a household connection to a piped water supply, water grid sanitation system or a rainwater harvesting technology. Multiple use water sources are included here.
	Extension and maintenance of water storage capacity	Intervention providing a new or improved water storage system for human consumption and activities related to its maintenance over time. This can include the installation of water storage tanks, household water storage kits etc.
	Monitoring of water availability, demand, and quality	Interventions building capacities and introducing new technologies and processes for the monitoring of availability, access, use and stability of water resources for human consumption
	Direct provision of safe water and purification systems	Intervention directly providing beneficiaries with clean and safe water for consumption or resources to prevent, remove or inactivate microbiological pathogens at the point of use. This includes the provision of drinkable water, water tablets, water purification kits and treatments.

APPENDIX 2. SEARCH METHODS

To identify relevant literature, we have conducted a comprehensive search for eligible studies using the standards and methods developed by Snilstveit et al. (2016; 2017) for compiling an Evidence Gap Map. Our search was developed in collaboration with an information specialist and referring to the guidance by Kugley et al. (2017) on searching for literature to inform these activities. We developed a set of English search terms that were applied to a wide array of electronic academic and institutional databases and repositories. To complement our online electronic database searches, we conducted citation tracking, published a blog presenting a public call for papers and contacted key experts and organizations to identify additional studies.

2.1. Electronic database searches

To identify relevant studies for our EGM, we created a set of search terms and developed a search strategy in collaboration with an information specialist to identify relevant literature. Our search terms combined Boolean terms with a list of keywords related to the review's inclusion criteria (see Appendix Table 4). The search strategy used for each academic database is available upon request.

Appendix Table 4. Search Strategy

CAB Global Health Database: CAB Global Health Host: Ovid Data Parameters: 1973-Current Date of search: 15 July 2022		
#	Searches	Results
1	(afghanistan or albania or algeria or american samoa or angola or "antigua and barbuda" or antigua or barbuda or argentina or armenia or armenian or aruba or azerbaijan or bahrain or bangladesh or barbados or republic of belarus or belarus or byelarus or belorussia or byelorussian or belize or british honduras or benin or dahomey or bhutan or bolivia or "bosnia and herzegovina" or bosnia or herzegovina or botswana or bechuanaland or brazil or brasil or bulgaria or burkina faso or burkina fasso or upper volta or burundi or urundi or cabo verde or cape verde or cambodia or kampuchea or khmer republic or cameroon or cameron or cameroun or central african republic or ubangi shari or chad or chile or china or colombia or comoros or comoro islands or iles comores or mayotte or democratic republic of the congo or democratic republic congo or congo or zaire or costa rica or "cote d'ivoire" or "cote d'ivoire" or cote divoire or cote d ivoire or ivory coast or croatia or cuba or cyprus or czech republic or czechoslovakia or djibouti or french somaliland or dominica or dominican republic or ecuador or egypt or united arab republic or el salvador or equatorial guinea or spanish guinea or eritrea or estonia or eswatini or swaziland or ethiopia or fiji or gabon or gabonese republic or gambia or "georgia (republic)" or georgian or ghana or gold coast or gibraltar or greece or grenada or guam or guatemala or guinea or guinea bissau or guyana or british guiana or haiti or hispaniola or honduras or hungary or india or indonesia or timor or iran or iraq or isle of man or jamaica or jordan or kazakhstan or kazakh or kenya or "democratic people's republic of korea" or republic of korea or north korea or south korea or korea or kosovo or kyrgyzstan or kirghizia or kirgizstan or kyrgyz republic or kirghiz or laos	652010

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 Date of search: 15 July 2022

#	Searches	Results
	<p>or lao pdr or "lao people's democratic republic" or latvia or lebanon or lebanese republic or lesotho or basutoland or liberia or libya or libyan arab jamahiriya or lithuania or macau or macao or republic of north macedonia or macedonia or madagascar or malagasy republic or malawi or nyasaland or malaysia or malay federation or malaya federation or maldives or indian ocean islands or indian ocean or mali or malta or micronesia or federated states of micronesia or kiribati or marshall islands or nauru or northern mariana islands or palau or tuvalu or mauritania or mauritius or mexico or moldova or moldovian or mongolia or montenegro or morocco or ifni or mozambique or portuguese east africa or myanmar or burma or namibia or nepal or netherlands antilles or nicaragua or niger or nigeria or oman or muscat or pakistan or panama or papua new guinea or new guinea or paraguay or peru or philippines or philipines or phillippines or phillippines or poland or "polish people's republic" or portugal or portuguese republic or puerto rico or romania or russia or russian federation or ussr or soviet union or union of soviet socialist republics or rwanda or ruanda or samoa or pacific islands or polynesia or samoan islands or navigator island or navigator islands or "sao tome and principe" or saudi arabia or senegal or serbia or seychelles or sierra leone or slovakia or slovak republic or slovenia or melanesia or solomon island or solomon islands or norfolk island or norfolk islands or somalia or south africa or south sudan or sri lanka or ceylon or "saint kitts and nevis" or "st. kitts and nevis" or saint lucia or "st. lucia" or "saint vincent and the grenadines" or saint vincent or "st. vincent" or grenadines or sudan or suriname or surinam or dutch guiana or netherlands guiana or syria or syrian arab republic or tajikistan or tadjikistan or tadjhikistan or tadjhik or tanzania or tanganyika or thailand or siam or timor leste or east timor or togo or togolese republic or tonga or "trinidad and tobago" or trinidad or tobago or tunisia or turkey or turkmenistan or turkmen or uganda or ukraine or uruguay or uzbekistan or uzbek or vanuatu or new hebrides or venezuela or vietnam or viet nam or middle east or west bank or gaza or palestine or yemen or yugoslavia or zambia or zimbabwe or northern rhodesia or global south or africa south of the sahara or sub-saharan africa or subsaharan africa or africa, central or central africa or africa, northern or north africa or northern africa or magreb or maghrib or sahara or africa, southern or southern africa or africa, eastern or east africa or eastern africa or africa, western or west africa or western africa or west indies or indian ocean islands or caribbean or central america or latin america or "south and central america" or south america or asia, central or central asia or asia, northern or north asia or northern asia or asia, southeastern or southeastern asia or south eastern asia or southeast asia or south east asia or asia, western or western asia or europe, eastern or east europe or eastern europe or developing country or developing countries or developing nation? or developing population? or developing world or less developed countr* or less developed nation? or less developed population? or less developed world or lesser developed countr* or lesser developed nation? or lesser developed population? or lesser developed world or under developed countr* or under developed nation? or under developed population? or under developed world or underdeveloped countr* or</p>	

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 Date of search: 15 July 2022

#	Searches	Results
	<p>underdeveloped nation? or underdeveloped population? or underdeveloped world or middle income countr* or middle income nation? or middle income population? or low income countr* or low income nation? or low income population? or lower income countr* or lower income nation? or lower income population? or underserved countr* or underserved nation? or underserved population? or underserved world or under served countr* or under served nation? or under served population? or under served world or deprived countr* or deprived nation? or deprived population? or deprived world or poor countr* or poor nation? or poor population? or poor world or poorer countr* or poorer nation? or poorer population? or poorer world or developing econom* or less developed econom* or lesser developed econom* or under developed econom* or underdeveloped econom* or middle income econom* or low income econom* or lower income econom* or low gdp or low gnp or low gross domestic or low gross national or lower gdp or lower gnp or lower gross domestic or lower gross national or lmic or lmics or third world or lami countr* or transitional countr* or emerging economies or emerging nation?).ti,ab.</p>	
2	<p>(afghan or afghans or afghani or albanian? algerian? or american samoan? or angolan? or antiguan? or barbudan? or argentine? or argentinian? or argentinean? or armenian? or aruban? or azerbaijani? or bahraini? or bangladeshi? or bangalees or bajan? or belarusian? or byelorussian? or belizean? or beninese? or bhutanese or bolivian? or bosnian? or botswana or batswana or brazilian? or brasilian? or bulgarian? or burkinabe or burkinese or burundian? or cape verdean? or cabo verdean? or cambodian? or khmer or cameroonian? or central african? or chadian? or chilean? or chinese or colombian? or comorian? or congolese or costa rican? or ivorian? or croatian? or cuban? or cypriot? or czech? or djiboutian? or dominican? or ecuadorian? or egyptian? or salvadoran? or equatorial guinean? or equatoguinean? or eritrean? or estonian? or swazi? or swati? or ethiopian? or fijian or gabonese or gabonaise or gambian? or georgian? or ghanaian? or gibraltarian? or greek? or grenadian? or guamanian? or guatemalan? or guinean? or bissau guinean? or guyanese or haitian? or honduran? or hungarian? or indian? or indonesian? or iranian? or iraqian? or iraqi? or manx or jamaican? or jordanian? or kazakhstani? or kenyan? or kirabati or kirabatian? or north korean? or korean? or kosovar? or kosovan? or kyrgyz* or lao or laotian? or latvian? or lebanese or lesothan? or lesothonian? or mosotho or basotho or liberian? or libyan? or lithuanian? or macanese or macedonian? or malagasy or madagascan? or malawian? or malaysian? or maldivian? or malian? or maltese or marshallese? or mauritanian? or mauritian? or mexican? or micronesian? or moldovan? or mongolian? or mongol or montenegrin? or moroccan? or mozambican? or burmese or myanma or namibian? or nauruan? or nepali or nepalese or netherlands antillean? or nicaraguan? or nigerien? or nigerian? or northern mariana islander? or mariana? or omani? or pakistani? or palauan? or panamanian? or papua new guinean? or paraguayan? or peruvian? or philippine? or philipine? or phillipine? or phillippine? or filipino? or filipina? or polish or pole or poles or portuguese or puerto rican? or romanian? or russian? or soviet people or soviet population or rwandan? or rwandese or ruandan? or</p>	352040

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 Database: CAB Global Health
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 Date of search: 15 July 2022

#	Searches	Results
	ruandese or samoan? or sao tomean? or santomean? or saudi arabian? or saudi? or senegalese or serbian? or montenegrin? or seychellois or seychelloise? or sierra leonean? or slovak? or slovene? or solomon islander? or somali? or south african? or south sudanese or sri lankan? or ceylonese or kittitian? or nevisian? or saint lucian? or vincentian? or sudanese or surinamese? or syrian? or tajik? or tajikistani? or tanzanian? or tanganyikan? or thai or timorese? or togolese or tongan? or trinidadian? or tobagonian? or tunisian? or turk? or turkish or turkmen? or tuvaluan? or ugandan? or ukrainian? or uruguayan? or uzbek? or vanuatu* or venezuelan? or vietnamese or yemeni? or yemenite? or yemenese or yugoslav? or yugoslavian? or zambian? or zimbabwean? or african? or asian? or pacific islander? or latin american? or central american? or south american? or caribbean? or west indian? or iberoamerican? or middle eastern?).ti,ab.	
3	Developing Countries/	3
4	(Austria or Belgium or France or Germany or Italy or Spain).ti,ab.	73704
5	1 or 2 or 3 or 4	886878
6	refugees/	3582
7	("International* displac*" or Refugee* or migrant*).ti,ab.	11410
8	disasters/ or natural disasters/	5696
9	emergencies/	4064
10	Humanitarian.ti,ab.	2020
11	(disaster* or aftermath or emergenc* or "mass* casualt*" or catastrophe* or calamit* or cataclysmic or crisis or crises or outbreak* or "out break*" or "black swan" or "natural hazard" or "relief work" or "relief plan*" or rescue or vulnerable or (extreme adj event*).ti,ab.	172918
12	Earthquakes/	1998
13	Landslides/	218
14	volcanoes/	95
15	Avalanches/	32
16	(Geophysical or earthquake* or aftershock* or foreshock* or volcano* or volcanic or lava or landslide* or "land slide*" or mudslide* or "mud slide*" or mudflow* or rockslide* or "ash fall" or "ash cloud" or "Pyroclastic flow" or "rock slide*" or "rock fall" or seismic or avalanche* or sinkhole* or "sink hole*" or "mass movement" or "ground movement" or lahar).ti,ab.	3845
17	Floods/	1562
18	Tidal Waves/	482
19	Tsunamis/	482
20	(Hydrological or storm* or flood* or tsunami* or tidal wave* or "wave action" or Seiche or "limnic erupt*" or thunderstorm* or (sea adj2 surge)).ti,ab.	11158
21	climate change/	11156
22	drought/	2093
23	(Climatological or climate or climatic or (global* adj2 warm*) or "heat wave*" or "El Niño" or "cold wave" or glacial or glacier or drought* or famine* or evapotranspiration or greenhouse or ((crop* or harvest*) adj2 (fail* or devast*)) or fire* or bushfire* or wildfire* or ((extrem* or harsh or severe*) adj3 (weather or temperature* or heat or hot or cold or summer* or winter*))).ti,ab.	46396

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Date of search: 15 July 2022

#	Searches	Results
24	storms/	1375
25	(Meteorological or weather* or storm* or convective or blizzard* or cyclone* or typhoon* or hurricane* or tornado* or "dust storm*" or duststrom* or fog or hail* or thunderstorm* or "thunder storm*" or lightning or derecho* or monsoon*).ti,ab.	21381
26	(Biologic* or epidemic* or pandemic* or plague* or infestation* or infectious disease* or (disease* adj2 (viral or bacterial or parasitic or fungal or prion))).ti,ab.	265026
27	("space weather" or (space adj impact*) or airbust or geomagnetic or "extra terrestrial" or extraterrestrial).ti,ab.	79
28	war/	2157
29	(war* or genocide* or genocidal* or conflict* or violence or violent* or invasion* or uprising or coup* or military or militant* or terrorist* or "arab* spring" or solider* or combat* or ((politic* or election* or government* or election* or armed or army) adj3 (disturbance* or cris* or protest* or disput* or collaps* or deadlock or unstable or instability or intervention*)) or riot* or displacement* or displaced* or evacuat* or ((organised or arm*) adj2 violen*).ti,ab.	198811
30	((aeroplane or plane or jet or train*) adj3 (crash* or derail* or fire)).ti,ab.	77
31	Air Pollution/	25428
32	((industrial or environment* or air or "chemical spill" or "chemical accident" or "oil spill" or explosion or "gas leak" or poisoning or radiation or (human adj3 made) or (man adj3 made)) adj2 (accident* or degradation or pollution or destruction or hazard*).ti,ab.	22261
33	((economic* or currenc* or finance or financial) adj3 (crises or instability or unstable or collapse or downturn or crash or depression)).ti,ab.	894
34	(Recession or unemployment or underemployed or Agronomic*).ti,ab.	6493
35	6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34	632492
36	exp food security/	12309
37	food supply/ or food access/ or food aid/ or food policy/ or food shortages/ or emergency feeding/	9631
38	("relief work" and food*).ti,ab.	2
39	((food* or feed or fed or feeding or eat or eating or diet* or calorie* or nutrition* or malnutrition* or nutrient* or macronutrient* or micronutrient* or water*) adj6 (access or accessibility or accessing or adequate or agriculture or aid or amount* or assist or assistance or assisted or availability or available or bank* or centralised or consumption or cook or cooking or cope or coping or coupling or crises or crisis* or culture or decentralised or deficiency or deficient or depriv* or desirability or diet* or dignity or disability or disrupted or disrupting or disruption or distribution or economic* or education or employ* or environment or ethnicity or famine or foodbank* or hardship or hunger or hungry or income or insecure or insecurity or insufficient or intake or kitchen or livestock or logistical or logistics or macronutrient* or malnutrition or manage or management or managing or meal or meals or micronutrient* or need or need* or operation or operational or operations or pattern* or pay or payment* or	473778

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Database: CAB Global Health

Host: Ovid

Data Parameters: 1973-Current

Date of search: 15 July 2022

#	Searches	Results
	policies or policy or poor or poverty or preservation or preserved or price or pricing* or process or processing or produce or production or program or programme* or provided or provision or quality or race or recovery or reduced or reducing or relief or resilience or rural* or scarce or scarcity or secure or security or shock or shocks or shortage or shortfall or stability or stable or starv* or state or status or stress or subsid* or supplement or supplemental or supplementary or supplementation or supply or system* or technolog* or trade or trading or train or training or transform* or unstable or utilisation or utility or utilization or variety or voucher* or want* or yield*).ti,ab.	
40	36 or 37 or 38 or 39	475096
41	programme evaluation/	55
42	((match* adj2 (propensity or coarsened or covariate or neighbo?r)) or "propensity score" or ("difference* in difference*" or "difference-in-difference*" or "differences-in-difference*" or "double difference*") or (quasi-experiment\$2 or "quasi experiment\$2") or (estimator and evaluat*) or ("instrumental variable*" or (IV adj2 (estimation or approach))) or (Heckman adj3 (model* or approach*)) or ((two-stage or "two stage") adj3 (control* or function* or "least squares")) or "regression discontinuity" or "time series" or counterfactual or "segment* regression" or (non adj2 participant*) or ((control or comparison) adj2 (group* or condition* or area* or village* or household* or intervention)) or (panel\$1 adj2 (data or household* or model*)) or ((exploit* or "tak* advantage") adj3 (variation* or variety or exogen* or heterogen*)) or (econometric adj2 (model* or adjust*)) or (select* adj2 (bias* or self))).ti,ab.	158923
43	((experiment\$4 adj2 (design or study or research or evaluation or evidence or vary or varies or variation)) or ((random or randomi#ed or randomly) adj2 (trial or assign* or treatment or control* or allocat* or experiment\$2 or vary or varies or variation or choose or chose*))).ti,ab.	102980
44	("program* evaluation" or "project evaluation" or "evaluation research" or "natural experiment*" or "program* effectiveness" or "outcome assessment" or "evaluation study" or "field experiment").ti,ab.	4790
45	((impact? or effect*) adj2 (evaluat* or assess or assessing or assessment or analyze or analyse or analyzing or analysing or analysis or analytical or estimate or estimating or estimation or cause or causal)).ti,ab.	109670
46	"Systematic Review"/	49420
47	((Systematic* or synthes*) adj3 (research or evaluation* or overview or finding* or thematic* or report or descriptive or explanatory or narrative or meta* or review* or data or literature or studies or evidence or map or mapping or quantitative or study or studies or paper or impact or impacts or effect* or compar*).ti,ab.	72916
48	("Meta regression" or "meta synth*" or "meta-synth*" or "meta analy*" or "metaanaly*" or "meta-analy*" or "metanaly*" or "Metaregression" or "Meta-regression" or "Methodologic* overview" or "pool* analys*" or "pool* data" or "Quantitative* overview" or "research integration").ti,ab.	49247

CAB Global Health		
Database: CAB Global Health		
Host: Ovid		
Data Parameters: 1973-Current		
Date of search: 15 July 2022		
#	Searches	Results
49	((effectiveness or effects or systemat* or synth* or integrat* or gap or methodologic* or quantitative or evidence or literature or rapid or scoping) adj3 (review or map)).ti,ab.	80783
50	41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49	419944
51	(2000* or 2001* or 2002* or 2003* or 2004* or 2005* or 2006* or 2007* or 2008* or 2009* or 2010* or 2011* or 2012* or 2013* or 2014* or 2015* or 2016* or 2017* or 2018* or 2019* or 2020* or 2021* or 2022*).yr.	2882986
52	5 and 35 and 40 and 50 and 51	3833

We used these terms to search 14 academic databases and 44 institutional websites, a full list of which is provided in Appendix Table 5. To reduce the risk of publication bias, these sources were selected to cover a range of publication types, including journal articles, working and discussion papers, conference proceedings, thesis and dissertations and institutional reports. We identified relevant sources by consulting an information specialist and other known related systematic reviews and evidence gap maps (e.g. Moore et al., 2021).

Appendix Table 5. List of databases, repositories and websites searched

Academic databases	
Agricola Articles	
ASSIA Applied Social Sciences Index and Abstracts via ProQuest	
CAB Global Health via Ovid	
EBSCO Discovery (Limited to items from RePEc, World Bank eLibrary, Oxfam Policy and Practice)	
Econlit via EBSCOHost	
Epistimonikos	
GEOBASE via Ovid	
GreenFILE via EBSCOHost	
IBSS: International Bibliography of the Social Sciences via ProQuest	
LILACS	
MEDLINE (MEDALL) via Ovid	
Social Sciences Citation Index (SSCI) via Clarivate	
Sociological Abstracts via Pro Quest	
Worldwide Political Science Abstracts (WPSA) via Pro Quest	
Specialist organizations	
ActionAid	https://www.actionaid.org.uk/policy-and-research/research-and-publications/programme-evaluations
ALNAP	https://www.alnap.org/help-library/evaluation-map
CALP Network	https://www.calpnetwork.org/library/
CIGAR	https://www.cgiar.org/research/publications/
ELRHA	https://www.elrha.org/programme/research-for-health-in-humanitarian-crises/
Food and Agriculture Organization (FAO)	https://www.fao.org/publications/en/
Health in Humanitarian Crises Centre, LSHTM	https://www.lshtm.ac.uk/research/centres/health-humanitarian-crises-centre/publications

Specialist organizations	
International Federation of Red Cross and Red Crescent Societies	https://www.ifrc.org/evaluations
International Food Policy Research Institute (IFPRI)	https://www.ifpri.org/publications/search
International Livestock Research Institute (ILRI)	https://www.ilri.org/publications
International Rescue Committee (IRC)	https://www.rescue.org/reports-and-resources
Livestock Emergency Guidelines and Standards (LEGS)	https://www.livestock-emergency.net/general-resources-legs-specific/
SEADS	https://seads-standards.org/about/
UN OCHA	https://www.unocha.org/research-and-reports
UNHCR	https://www.unhcr.org/search?cid=49aea93a6a&scid=49aea93a39
World Food Programme	https://www.wfp.org/publications
World Vision	http://www.wvi.org/resources
Other international development organizations and related websites	
Abdul Latif Jameel Poverty Action Lab (J-Pal)	https://www.povertyactionlab.org/evaluations
African Development Bank (AfDB)	https://www.afdb.org/en/documents/evaluation-reports
Asian Development Bank (ADB)	https://www.adb.org/publications
British Library for Development Studies	https://guides.lib.sussex.ac.uk/c.php?g=655545&p=4613793
Campbell Collaboration Evidence Portal	https://www.campbellcollaboration.org/better-evidence.html
Center for Global Development	https://www.cgdev.org/section/publications
Centre for Effective Global Action (CEGA)	https://cega.berkeley.edu/our-research/
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	https://mia.giz.de/esearcha/browse.tt.html
Emergency Nutrition Network (ENN)	https://www.enonline.net/resources
EU Publications	https://op.europa.eu/en/web/general-publications/publications
European Commission	https://ec.europa.eu/info/publications_en
Foreign, Commonwealth and Development Office (FCDO)	www.gov.uk/research-for-development-outputs
German Institute for Development Evaluation (DEval)	https://www.deval.org/en/evaluations/our-evaluations
Innovations for Poverty Action (IPA)	https://www.poverty-action.org/search-studies
Inter-American Development Bank (IDB)	https://publications.iadb.org/en/publications

Other international development organizations and related websites	
International Initiative for Impact Evaluation (3ie)	https://developmentevidence.3ieimpact.org/
International Monetary Fund	https://www.elibrary.imf.org/
National Bureau of Economic Research (NBER) – Working Papers	https://www.nber.org/
Overseas Development Institute	https://odi.org/en/publications/
OECD iLibrary	https://www.oecd-ilibrary.org/search/advancedsearch
Oxfam International	https://policy-practice.oxfam.org.uk/publications
Registry for International Development Impact Evaluations	https://ridie.3ieimpact.org/
Social Science Research Network	https://www.ssrn.com/index.cfm/en/
Swedish International Development Cooperation Agency (SIDA)	https://www.sida.se/en/publications
UN DAC resource centre	https://resourcecenter.undac.org/
United Nations Evaluation Group	http://www.uneval.org/evaluation/reports
USAID Development Experience Clearinghouse (DEC)	https://dec.usaid.gov/dec/content/evaluations.aspx
World Bank Library	https://documents.worldbank.org/en/publication/documents-reports/documentlist

While some websites and databases had reasonably well-developed search functions, some did not support complex search strings. Many did not allow for the direct export of materials and others had to be browsed by keywords or even browsed in their entirety. We customized our search strategy according to the functionality of each database and website we searched (using the website’s thesaurus or keyword index if necessary to identify the most appropriate vocabulary). We documented the literature search process and any necessary changes to the search strategy for each source.

2.2. Citation tracking

We also performed backward and forward citation tracking of studies included in the map (Greenhalgh and Peacock, 2005). Backward citation tracking consisted of screening the reference lists or bibliography of included studies for other eligible studies cited in the text. Forward citation tracking involved searching for eligible studies that cite the original included study. For forward citation tracking, we utilized Google Scholar.

2.3. Searching other resources

We supplemented these searches by publishing an online blog presenting our EGM and calling for includable studies from academic and other evidence communities.¹ We also contacted key researchers and organizations working on issues related to this map and searched the included studies of other related evidence maps and reviews.

¹<https://www.3ieimpact.org/blogs/mapping-evidence-gaps-interventions-improving-food-security-humanitarian-settings>

APPENDIX 3. DETAILS OF PROCESS FOR SELECTION OF STUDIES

In order to identify relevant studies from our search we performed a two-stage selection process where trained reviewers assessed records against the inclusion and exclusion criteria.

Stage 1 – Title and abstract screening:

We started by collating and importing our search results into EPPI-Reviewer 4, the data management software used for screening records (Thomas et al., 2022). We then removed duplicate records using the de-duplication functionality in the software. Additional records identified through other maps, outreach with the public and sectoral experts and backwards citation tracking were manually added to EPPI Reviewer, only when the study had not been previously captured.

After de-duplicating records from our literature search, the first stage of our selection process consisted of screening the information available in record’s titles and abstracts against the inclusion and exclusion criteria. Reviewers were trained to use EPPI-reviewer for screening purposes and underwent theory- and practice-based training on how to consistently apply the reviews inclusion/exclusion criteria to records. A training set of records was independently screened and reconciled by three members of the core review team (CY, AN & MB), and used to initially train the reviewers.

Following training, reviewers were paired, and provided with sequential batches of the same 200 records for screening. Once each batch had been completed a meeting between reviewers was organized by a member of the core review team to discuss disagreements in the application of study eligibility criteria, with the aim of establishing a high level of inter-rater reliability in the following rounds. Each pair was assigned batches until they met an 85% inter-rater reliability (consistency) rating. Once reviewers met this threshold, they advanced to the main tranche of title-abstract screening where they reviewed records independently. During independent screening, we followed a ‘safety first’ approach whereby if a reviewer was uncertain about whether a record should be included or excluded, they requested a second opinion from another reviewer.

Trained reviewers independently screened records and those that were relevant and met the inclusion criteria were flagged for a full-text review in the second stage of the selection process. We excluded all records that did not meet the inclusion criteria. However, if a record’s title and abstract did not provide sufficient information to determine its relevance its full-text was reviewed (see Stage 2 below). The reviewers excluded records based on a prioritization and sequential exclusion approach (Saif-Ur-Rahman et al., 2022). We presented the exclusion criteria as a series of questions to the reviewers and arranged them in the sequential order shown in the Appendix Table 6.

Appendix Table 6. Sequential screening questions

Priority order	Question	Excluded if the answer is	TAS or FTS*
1.	Is the study a lab or efficacy study?	Yes	Both
2.	Does the study evaluate an intervention, policy, program, project?	No	Both
3.	Are participants living in an excluded high-income country at the time the intervention began?	Yes	Both

Priority order	Question	Excluded if the answer is	TAS or FTS*
4.	Does the study include a study design that is consistent with the review's inclusion criteria?	No	Both
5.	Has the study been published prior to the year 2000?	Yes	Both
6.	Does the study include an intervention that is consistent with the review's inclusion criteria?	No	Both
7.**	Is this study conducted in the context of a humanitarian emergency?	No	FTS
8.	Does the study include an outcome that is consistent with the review's inclusion criteria?	No	FTS
9.	Was the intervention implemented as a long-term recovery program?	Yes	FTS

Notes: If insufficient information is available to confidently answer a question, reviewers will proceed to the next question without excluding the study. Question 1 did not exclude records using lab-in-the-field experiments to measure changes in behavioral outcomes in the context of an evaluation of an intervention (e.g. see Armand et al., 2019). *Title-abstract screening (TAS), full-text screening (FTS). ** For FTS screening, this code was moved to 1 in the priority order.

The search for literature identified 45,683 records once duplicates were removed, some being more relevant to our review than others. We utilized the search and screening results of the International Initiative for Impact Evaluation's (3ie) ongoing evidence surveillance project. Having searched and screened studies for over a decade for its Development Evidence Portal (DEP) and other evidence synthesis projects (including systematic reviews and evidence gap maps), 3ie has recorded a list of studies that are excludable according to the first four exclusion criteria in the table of excluded records. Using this list of studies we were able to immediately exclude 2,303 records.

We also utilized the machine learning capabilities in EPPI-Reviewer 4 to expedite the title and abstract screening process using ten 'classifiers' developed using historic screening data from 3ie's DEP (see O'Mara-Eves et al., 2015; Thomas et al., 2011). The DEP's classifier models were developed to exclude studies not meeting the study design requirements in our inclusion criteria. Once a classifier was applied to our records, it provided estimates of the likelihood of inclusion (a pseudo-propensity score). All records with a maximum score above 20 were screened by reviewers. To check the efficacy of the DEPs classifier models, a random subset of 443 studies (2%) with a maximum score below 20 were also screened to check for their eligibility. The random subset of records below 20 were deemed excludable and as such all remaining records below 20 were excluded. This led to the exclusion of 26,800 records.

Stage 2 – Full text screening and study selection

In the second stage of the study selection process, using two independent reviewers we double screened all records flagged for a review using each manuscript's full text. We resolved all disagreements between the reviewers concerning a records inclusion through a discussion with a third core review team member.

Given the likelihood that a record's title and abstract provided no information on whether an intervention was implemented in an emergency context, we made the decision to not exclude a record based on its emergency context during title-abstract screening. This safety-first approach, led to a high number of records needing to be reviewed at full-text. In order to mitigate this, when conducting full-text screening, reviewers first made a judgement on whether a study took place in an emergency

context. This allowed reviewers to quickly and efficiently exclude a large number of records with relevant interventions, but which were not in emergency contexts. Following this, the same sequential exclusion criteria outlined above were used to determine an inclusion or exclusion decision for each record.

Linked studies

Once full-text screening was completed, we were able to identify multiple papers related to the same study. In this case, we were able to use EPPI reviewer to note which paper was the main paper and which was the linked paper. The main paper was used for data extraction, with the linked paper being used to supplement missing or additional information, not present in the main copy. In order to identify the main paper, we were consistent with the approach used by 3ie's Development Evidence Portal (DEP) team. Priority was given to papers which had previously had their data extracted and had already been uploaded to the DEP. Where a paper was not already on the DEP, priority was given to journal articles and, the most recent published paper in the case of multiple reports.

Forwards and Backwards Citation Tracking

Forwards and backwards citation tracking was completed for all studies included in the EGM from our initial database search, regardless of whether they had been coded as main or linked records. For forwards citation tracking, we were able to utilize Google Scholar through Publish or Perish to track papers which had referenced those included in the EGM. These studies were then uploaded to EPPI reviewer, de-duplicated against the studies already present on the software and screened through the same process described above.

For backwards citation tracking, an independent reviewer extracted all references from the full-text of included studies into an Excel sheet. From here, title-abstract screening was conducted, firstly by making a judgement based on the title of the reference. If deemed relevant, the full abstract was located and reviewed, and all papers marked as relevant were put through to review at the full-text screening stage.

This process again led to a high number of records to be reviewed based on their full-text. Two independent reviewers screened each record based on their full-text against whether there was an emergency context or not. If the paper was deemed to have taken place in an emergency context, a single reviewer then checked whether the record was already located in the EGM's EPPI reviewer. If it was not previously located, the paper was added manually, if it was previously located, then the paper was not added to EPPI, and was marked as a duplicate. From here, all records added from backwards citation tracking to EPPI, were screened independently at full-text by two reviewers against the inclusion/exclusion criteria set out above.

APPENDIX 4. EXAMPLES OF RECORDS EXCLUDED FROM THIS EGM FOR DIFFERENT CRITERIA

Reason for Exclusion	Reference	Overview of the study	Explanation for exclusion
Not in an emergency context	Cardenas and Fuller (2016)	The Reinforcing Resilience Capacity project started in 2011 in Bahr El Gazal, Chad. The land itself is arid and prone to droughts and many interventions were done to help build resilience. To name a few: seed distribution, vaccination of livestock, restocking livestock, etc.	This is not explicitly a humanitarian situation. The droughts responded to are seasonal and thus outside of our scope.
Not in an emergency context	Gazeaud and Ricard (2021)	The study takes place in rural Morocco where a conditional cash transfer program to combat school dropout rate is analyzed using a regression discontinuity design.	There is no emergency in this case. It is an intervention to improve school dropout rates.
Study design (methods not includable)	Rah et al. (2011)	A micronutrient distribution intervention targeted towards children under 5 and pregnant or lactating women. This took place during the time of Cyclone Sidr as an emergency program.	A cross-sectional assessment was done in order to identify anthropometric measurements and hemoglobin count. No rigorous design included in our protocol took place.
Intervention not relevant	Spangaro et al. (2021)	A systematic review that accesses the impact of interventions addressing IPV and sexual violence in areas of conflict and post-conflict in LMICs.	None of the interventions included in this review were of relevance to our EGM.
Outcomes not relevant	Adelman et al. (2008)	An on-site school feedings program in Northern Uganda designed to facilitate school attendance.	Educational outcomes are included derived from school math and literacy tests. Educational outcomes are excluded from our EGM.
Outcomes not relevant	Aguirre (2019)	This study evaluated the impact of forecast-based finance in Peru to reduce potential damage to houses from heavy rainfall associated with El Niño. The intervention was activated following the forecast of an El Niño event.	The measured outcome was 'scale of house damage'. Outcomes related to measures of damage to infrastructure are considered excludable from our EGM unless the infrastructure is relevant for market access.

Reason for Exclusion	Reference	Overview of the study	Explanation for exclusion
Long-term recovery program	Lain and Bishop (2018)	The intervention aimed to build resilience of the people affected by the drought in 2011 in Kenya. It worked on capacity building, business training, monitoring the affected families, etc.	This study evaluates a follow up project that was implemented in 2011 following severe drought. Though the original project is of relevance, the follow up project focused on in this study aims to build resilience and is implemented in the third and fourth phase of the overall project.

APPENDIX 5. LIST OF INCLUDED PAPERS

A total of 227 studies met our inclusion criteria: 163 of these are unique studies, of which 146 are impact evaluations and 17 are systematic reviews. The remaining 64 are linked studies. The list of included impact evaluations and systematic reviews are presented below. Note that linked studies have been added (indented to the right) below their corresponding unique studies.

5.1 List of included impact evaluations

Abay, K.A., Berhane, G., Hoddinott, J. and Tafere, K. (2020) *Covid-19 and Food Security in Ethiopia: Do Social Protection Programs Protect?* Policy Research Working Paper No. 9475. Washington, DC: World Bank. Available at: <https://openknowledge.worldbank.org/handle/10986/34794> (Accessed: 12 December 2022).

Abay, K.A., Berhane, G., Hoddinott, J.F. and Tafere, K. (2020) *Covid-19 and Food Security in Ethiopia: Do Social Protection Programs Protect?* IFPRI Discussion Paper No. 01972. Washington, DC: International Food Policy Research Institute. Available at: <https://ebrary.ifpri.org/digital/collection/p15738coll2/id/134146> (Accessed: 12 December 2022).

Abdullahi, A., Ali, M., Kipchumba, E. and Sulaiman, M. (2022) 'Supporting Micro-Enterprise in Humanitarian Programming: Impact Evaluation of Business Grants Versus Unconditional Cash Transfer', *Journal of African Economies*, pp. 1-24. doi: 10.1093/jae/ejac012

Abdullahi, A., Ali, M., Kipchumba, E. and Sulaiman, M. (2021) *Supporting Micro-Enterprise in Humanitarian Programming: Impact Evaluation of Business Grants Versus Unconditional Cash Transfer*. PEDL Research Paper: Private Enterprise Development in Low Income Countries (PEDL). Available at: <https://pedl.cepr.org/publications/supporting-micro-enterprise-humanitarian-programming-impact-evaluation-business-grants> (Accessed: 12 December 2022).

Adelman, S., Gilligan, D.O., Konde-Lule, J. and Alderman, H. (2019) 'School Feeding Reduces Anemia Prevalence in Adolescent Girls and Other Vulnerable Household Members in a Cluster Randomized Controlled Trial in Uganda', *The Journal of Nutrition*, 149(4), pp. 659-666. doi: 10.1093/jn/nxy305

Aker, J.C. (2017) 'Comparing Cash and Voucher Transfers in a Humanitarian Context: Evidence from the Democratic Republic of Congo', *The World Bank Economic Review*, 31(1), pp. 44-70. doi: 10.1093/wber/lhv055

Aker, J.C. (2013a) *Cash or Coupons? Testing the Impacts of Cash Versus Vouchers in the Democratic Republic of Congo*. Working Paper No. 320. Washington, DC: Center for Global Development. Available at: <https://papers.ssrn.com/abstract=2241237> (Accessed: 12 December 2022).

Aker, J.C., Boumniel, R., McClelland, A. and Tierney, N. (2011) *Zap It to Me: The Short-Term Impacts of a Mobile Cash Transfer Program*. Working Paper No. 268. Washington, DC: Center for Global Development. Available at: https://www.cgdev.org/sites/default/files/1425470_file_Aker_et_al_Zap_It_to_Me_FINAL.pdf (Accessed: 12 December 2022).

- Aker, J.C. (2014) *Comparing Cash and Voucher Transfers in a Humanitarian Context: Evidence from the Democratic Republic of Congo*. Working Paper. Available at: <https://academic.oup.com/wber/article-lookup/doi/10.1093/wber/lhv055> (Accessed: 12 December 2022).
- Aker, J.C. (2015) 'Comparing Cash and Voucher Transfers in a Humanitarian Context: Evidence from the Democratic Republic of Congo', *The World Bank Economic Review*, 31(1), pp. 44-70. doi: 10.1093/wber/lhv055
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- Albelbeisi, A., Shariff, Z.M., Mun, C.Y., Rahman, H.A. and Abed, Y. (2020) 'Multiple Micronutrient Supplementation Improves Growth and Reduces the Risk of Anemia among Infants in Gaza Strip, Palestine: A Prospective Randomized Community Trial', *Nutrition Journal*, 19(1), p. 133. doi: 10.1186/s12937-020-00652-7
- Alexia, P. and Andrew, A. (2016) *Livelihoods in South Sudan: Impact Evaluation of the South Sudan Peace and Prosperity Promotion Project*. Effectiveness Review Series No. 2016/17. Oxford: Oxfam GB. Available at: <https://policy-practice.oxfam.org/resources/livelihoods-in-south-sudan-impact-evaluation-of-the-south-sudan-peace-and-prosp-620864/> (Accessed: 12 December 2022).
- Altındağ, O. and O'Connell, S.D. (2023) 'The Short-Lived Effects of Unconditional Cash Transfers to Refugees', *Journal of Development Economics*, 160, p. 102942. doi: 10.1016/j.jdeveco.2022.102942
- Altındağ, O. and O'Connell, S.D. (2020) *Unconditional Cash-Based Assistance to the Poor: What Do at-Scale Programs Achieve?* Working Paper. Available at: <https://papers.ssrn.com/abstract=3719946> (Accessed: 12 December 2022).
- Amadu, F.O., McNamara, P.E. and Davis, K.E. (2021) 'Soil Health and Grain Yield Impacts of Climate Resilient Agriculture Projects: Evidence from Southern Malawi', *Agricultural Systems*, 193, p. 103230. doi: 10.1016/j.agsy.2021.103230
- American Institutes for Research (2017) *Humanitarian Cash Transfers in the Democratic Republic of the Congo: Evidence from UNICEF's Arcc II Programme*. Washington, DC: American Institutes for Research (AIR). Available at: <https://www.calpnetwork.org/publication/humanitarian-cash-transfers-in-the-democratic-republic-of-the-congo-evidence-from-unicefs-arcc-ii-programme/> (Accessed: 12 December 2022).
- American Institutes for Research (2016) *Zambia's Multiple Category Targeting Grant: 36-Month Impact Report*. American Institutes for Research. Washington, DC: American Institutes for Research (AIR). Available at: <https://transfer.cpc.unc.edu/wp-content/uploads/2021/04/Zambia-MCTG-36-Mo-Report.pdf> (Accessed: 12 December 2022).
- Avdeenko, A. and Frölich, M. (2019) *Impacts of Increasing Community Resilience through Humanitarian Aid in Pakistan*. 3ie Impact Evaluation Report No. 100. New Delhi: International

- Initiative for Impact Evaluation (3ie). Available at: <https://doi.org/10.23846/TW61E100> (Accessed: 12 December 2022).
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- Awotide, B.A., Awoyemi, T.T., Salman, K.K. and Diagne, A. (2013) 'Impact of Seed Voucher System on Income Inequality and Rice Income Per Hectare among Rural Households in Nigeria: A Randomized Control Trial (RCT) Approach', *Quarterly Journal of International Agriculture*, 52(2), pp. 95-117. doi: 10.22004/ag.econ.173642
- Awotide, B.A., Karimov, A., Diagne, A. and Nakelse, T. (2013) 'The Impact of Seed Vouchers on Poverty Reduction among Smallholder Rice Farmers in Nigeria', *Agricultural Economics*, 44(6), pp. 647-658. doi: 10.1111/agec.12079
- Babatunde, R.O. and Olagunju, F.I. (2020) *Cash or Food Transfer? Assessing the Effectiveness of Social Safety Nets for Households During Covid-19 Pandemic in Nigeria*. Working Paper. Available at: <https://aec.afdb.org/en/papers/cash-or-food-transfer-assessing-effectiveness-social-safety-nets-households-during-covid-19-pandemic-nigeria-407> (Accessed: 12 December 2022).
- Balalian, A.A., Daniel, S., Simonyan, H. and Khachadourian, V. (2022) 'Comparison of Conditional and Marginal Models in Assessing a Child Nutrition Intervention in Armenia', *Maternal and Child Health Journal*, 26(6), pp. 1358-1366. doi: 10.1007/s10995-021-03308-y
- Balaluka, G.B., Nabugobe, P.S., Mitangala, P.N., Cobohwa, N.B., Schirvel, C., Dramaix, M.W. and Donnen, P. (2012) 'Community Volunteers Can Improve Breastfeeding among Children under Six Months of Age in the Democratic Republic of Congo Crisis', *International Breastfeeding Journal*, 7, pp. 1-8. doi: 10.1186/1746-4358-7-2
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APPENDIX 6. DATA EXTRACTION AND MANAGEMENT

Data was extracted by an independent reviewer, who was trained against a practice set extracted by two members of the core review team. Descriptive and methodological data from each study was extracted using a standardized data extraction form (our codebook is available in Appendix Table 7). The following types of data was extracted:

1. Descriptive data including authors, publication date and status, as well as other information to characterize the study (such as country, type of intervention and outcome, population, context, intervention design, etc.).
2. Methodological information on study design, analysis method, type of comparison group, consideration of equity-sensitive analysis.
3. Critical appraisal results.
 - a. All included systematic reviews were critically appraised following the practices adopted by the 3ie systematic review database protocol, which draws on Lewin et al. (2009). This appraisal assesses systematic reviews according to criteria relating to the search, screening, data extraction, and synthesis activities conducted and covers the most common areas where biases are introduced. Each systematic review was rated as low, medium, or high confidence drawing on guidance provided by Snilstveit et al. (2017). We did not critically appraise impact evaluations, as this is typically beyond the scope of EGMs. The critical appraisal tool used for this purpose is presented in Appendix Table 8.

All data extracted was subject to a quality assurance process whereby a member of the core team reviewed the extracted data. Any disagreements were resolved through discussion. All reviewers were provided with a mechanism through which they were able to communicate to the core review team that they had a question about an aspect of a studies data. A core team member provided a response to these queries. A member of the core team completed critical appraisals independently.

Appendix Table 7. Data extraction form

Code	Subcode
Study Information	Study ID
	Coder name
	Title name
	Foreign Title
	Short title
	Language
Author Information	Authors Name
	Authors Affiliation Institution
	Authors Affiliation Country
Publication Information	Publication Type
	DOI
	Study status
	Abstract
	Keywords
	Journal name

Code	Subcode
	Other journal name
	Journal volume
	Journal issue
	Pages
	Year of Publication
	URL
	Publisher location
	Open access
Sector Information	Sector name
	Sub-sector name
	DAC rank
	Primary DAC Code
	Secondary DAC Code
	CRS-Voluntary (tertiary) Code
	SDGs
	WB first theme
	WB first sub-theme
	WB second theme
	WB second sub-theme
	WB third theme
	WB third sub-theme
	Other topics
	Equity focus
	Equity dimension
	Equity description
Geographic Information	First year of intervention
	Continent name
	Country name
	Additional country
	Country income level
	Region name
	State/province name
	District name
	City/town name
	Location name
Target population and cost data	Age
	Sex
	Setting
	Sexual orientation
	Specific population group
	Cost data
	Type of cost data
Methodological information	Evaluation Design
	Evaluation Method
	Mixed Method
	Additional quantitative Methods
	Additional qualitative Methods
	Unit of Observation
	Project Name

Code	Subcode
Program, Funding and Implementation Information	Implementation Agency Category
	Implementation Agency Name
	Program Funding Agency Category
	Program Funding Agency Name
	Researching Funding Agency Category
	Researching Funding Agency Name
Intervention Information (DEP categories)	Treatment group/Arm 1
	Treatment group/Arm 1 Description
	Treatment group/Arm 2
	Treatment group/Arm 2 Description
	(Create additional options as necessary)
Outcome Information (DEP categories)	Outcome
	Outcome description
	(Create additional options as necessary)
EGM custom fields data	Interventions (EGM categories)
	Outcomes (EGM categories)
	Intervention design
	Population targeting
	Population targeting text
	Population analyzed
	Population analyzed text
	Emergency (disaster typology)
	Slow-onset or rapid-onset
	Humanitarian programming phase
	Cost-evidence
	Cost-evidence text

Appendix Table 8. Systematic review critical appraisal tool

Question	Criteria
Section A: Methods used to identify, include and critically appraise studies	
A.1 Were the criteria used for deciding which studies to include in the review reported? Did the authors specify: <ul style="list-style-type: none"> ▪ Types of studies ▪ Participants/ settings/ population ▪ Intervention(s) ▪ Outcome(s) 	Yes; partially; no; can't tell Coding guide - check the answers above YES: All four should be yes NO: All four should be no PARTIALLY: Any other

Question	Criteria
<p>A.2 Was the search for evidence reasonably comprehensive? Were the following done:</p> <ul style="list-style-type: none"> ▪ Language bias avoided (no restriction of inclusion based on language) ▪ No restriction of inclusion based on publication status ▪ Relevant databases searched (<u>Minimum criteria</u>: All reviews should search at least one source of grey literature such as Google; for health: Medline/ Pubmed + Cochrane Library; for social sciences IDEAS + at least one database of general social science literature and one subject specific database) ▪ Reference lists in included articles checked ▪ Authors/experts contacted 	<p>Yes; partially; no; can't tell Coding guide - check the answers above: YES: All five should be yes PARTIALLY: Relevant databases and reference lists are both reported NO: Any other</p>
<p>A.3 Does the review cover an appropriate time period? Is the search period comprehensive enough that relevant literature is unlikely to be omitted?</p>	<p>Yes; can't tell (only use if no information about time period for search); no; unsure Coding guide: YES: Generally, this means searching the literature at least back to 1990 NO: Generally, if the search does not go back to 1990 CAN'T TELL: No information about time period for search Note: With reference to the above – there may be important reasons for adopting different dates for the search, e.g. depending on the intervention. If you think there are limitations with the timeframe adopted for the search which have not been noted and justified by the authors, you should code this item as a NO and specify your reason for doing so in the comment box below. Older reviews should not be downgraded, but the fact that the search was conducted some time ago should be noted in the quality assessment. Always report the time period for the search in the comment box.</p>
<p>A.4 Was bias in the selection of articles avoided? Did the authors specify:</p> <ul style="list-style-type: none"> ▪ Independent screening of full text by at least 2 reviewers ▪ List of included studies provided ▪ List of excluded studies provided 	<p>Yes; partially; no Coding guide: YES: All three should be yes, although reviews published in journals are unlikely to have a list of excluded studies (due to limits on word count) and the review should not be penalized for this. PARTIALLY: Independent screening and list of included studies provided are both reported</p>

Question	Criteria
	NO: All other. If list of included studies provided, but the authors do not report whether or not the screening has been done by 2 reviewers review is downgraded to NO.
<p>A.5 Did the authors use appropriate criteria to assess the quality and risk of bias in analyzing the studies that are included?</p> <ul style="list-style-type: none"> ▪ The criteria used for assessing the quality/ risk of bias were reported ▪ A table or summary of the assessment of each included study for each criterion was reported ▪ Sensible criteria were used that focus on the quality/ risk of bias (and not other qualities of the studies, such as precision or applicability/external validity). “Sensible” is defined as a recognized quality appraisal tool/ checklist, or similar tool which assesses bias in included studies. Please see footnotes for details of the main types of bias such a tool should assess. 	<p>Yes; partially; no</p> <p>Coding guide:</p> <p>YES: All three should be yes</p> <p>PARTIALLY: The first and third criteria should be reported. If the authors report the criteria for assessing risk of bias and report a summary of this assessment for each criterion, but the criteria may be only partially sensible (e.g. do not address all possible risks of bias, but do address some), we downgrade to PARTIALLY.</p> <p>NO: Any other</p>
<p>A.6 Overall – how much confidence do you have in the methods used to identify, include and critically appraise studies?</p> <p>Summary assessment score A relates to the five questions above.</p> <p>High confidence applicable when the answers to the questions in section A are all assessed as ‘yes’</p> <p>Low confidence applicable when any of the following are assessed as ‘NO’ above: not reporting explicit selection criteria (A1), not conducting reasonably comprehensive search (A2), not avoiding bias in selection of articles (A4), not assessing the risk of bias in included studies (A5)</p> <p>Medium confidence applicable for any other – i.e. section A3 is assessed as ‘NO’ or ‘can’t tell’ and remaining sections are assessed as ‘partially’ or ‘can’t tell’</p>	<p>Low confidence (limitations are important enough that the results of the review are not reliable)</p> <p>Medium confidence (limitations are important enough that it would be worthwhile to search for another systematic review and to interpret the results of this review cautiously, if a better review cannot be found)</p> <p>High confidence (only minor limitations)</p>
Section B: Methods used to analyze the findings	
<p>B.1 Were the characteristics and results of the included studies reliably reported?</p> <p>Was there:</p> <ul style="list-style-type: none"> ▪ Independent data extraction by at least two reviewers ▪ A table or summary of the characteristics of the participants, 	<p>Yes; no; partially; not applicable (e.g. no included studies)</p> <p>Coding guide:</p> <p>YES: All three should be yes</p> <p>PARTIALLY: Criteria one and three are yes, but some information is lacking on second criteria.</p> <p>No: None of these are reported. If the review does not report whether data was</p>

Question	Criteria
<p>interventions and outcomes for the included studies</p> <ul style="list-style-type: none"> ▪ A table or summary of the results of all the included studies 	<p>independently extracted by 2 reviewers (possibly a reporting error), we downgrade to NO. NOT APPLICABLE: if no studies/no data</p>
<p>B.2 Are the methods used by the review authors to analyze the findings of the included studies clear, including methods for calculating effect sizes if applicable?</p>	<p>Yes; partially; no; not applicable Coding guide: YES: Methods used clearly reported. If it is clear that the authors use narrative synthesis, they don't need to say this explicitly. PARTIALLY: Some reporting on methods but lack of clarity NO: Nothing reported on methods NOT APPLICABLE: if no studies/no data</p>
<p>B.3 Did the review describe the extent of heterogeneity? Did the review ensure that included studies were similar enough that it made sense to combine them, sensibly divide the included studies into homogeneous groups, or sensibly conclude that it did not make sense to combine or group the included studies? Did the review discuss the extent to which there were important differences in the results of the included studies? If a meta-analysis was done, was the I², chi square test for heterogeneity or other appropriate statistic reported? If no statistical test was reported, is a qualitative justification made for the use of random effects?</p>	<p>Yes; partially; no; not applicable Coding guide: YES: First two should be yes, and third category should be yes if applicable should be yes PARTIALLY: The first category is yes NO: Any other NOT APPLICABLE: if no studies/no data</p>
<p>B.4 Were the findings of the relevant studies combined (or not combined) appropriately relative to the primary question the review addresses and the available data? How was the data analysis done?</p> <ul style="list-style-type: none"> ▪ Descriptive only ▪ Vote counting based on direction of effect ▪ Vote counting based on statistical significance ▪ Description of range of effect sizes ▪ Meta-analysis ▪ Meta-regression ▪ Other: specify ▪ Not applicable (e.g. no studies or no data) <p>How were the studies weighted in the analysis?</p> <ul style="list-style-type: none"> ▪ Equal weights (this is what is done when vote counting is used) 	<p>Yes; partially; no; not applicable (e.g. no studies or no data); can't tell. Coding guide: YES: If appropriate table, graph or meta-analysis AND appropriate weights AND unit of analysis errors addressed (if appropriate). PARTIALLY: If appropriate table, graph or meta-analysis AND appropriate weights AND unit of analysis errors not addressed (and should have been). NO: If narrative OR vote counting (where quantitative analyses would have been possible) OR inappropriate reporting of table, graph or meta-analyses. NOT APPLICABLE: if no studies/no data CAN'T TELL: if unsure (note reasons in comments below)</p>

Question	Criteria
<ul style="list-style-type: none"> ▪ By quality or study design (this is rarely done) ▪ Inverse variance (this is what is typically done in a meta-analysis) ▪ Number of participants (sample size) ▪ Other: specify ▪ Not clear ▪ Not applicable (e.g. no studies or no data) <p>Did the review address unit of analysis errors?</p> <ul style="list-style-type: none"> ▪ Yes - took clustering into account in the analysis (e.g. used intra-cluster correlation coefficient) ▪ No, but acknowledged problem of unit of analysis errors ▪ No mention of issue ▪ Not applicable - no clustered trials or studies included 	
<p>B.5 Does the review report evidence appropriately?</p> <p>The review makes clear which evidence is subject to low risk of bias in assessing causality (attribution of outcomes to intervention), and which is likely to be biased, and does so appropriately</p> <p>Where studies of differing risk of bias are included, results are reported and analyzed separately by risk of bias status</p>	<p>Yes; partially; no; not applicable</p> <p>Coding guide:</p> <p>YES: Both criteria should be fulfilled (where applicable)</p> <p>NO: Criteria not fulfilled</p> <p>PARTIALLY: Only one criterion fulfilled, or when there is limited reporting of quality appraisal (the latter applies only when inclusion criteria for study design are appropriate)</p> <p>NOT APPLICABLE: No included studies</p> <p>Note on reporting evidence and risk of bias: For reviews of effects of 'large n' interventions, experimental and quasi-experimental designs should be included (if available). For reviews of effects of 'small n' interventions, designs appropriate to attribute changes to the intervention should be included (e.g. pre-post with assessment of confounders)</p>
<p>B.6 Did the review examine the extent to which specific factors might explain differences in the results of the included studies?</p> <p>Were factors that the review authors considered as likely explanatory factors clearly described?</p> <p>Was a sensible method used to explore the extent to which key factors explained heterogeneity?</p> <ul style="list-style-type: none"> ▪ Descriptive/textual ▪ Graphical ▪ Meta-analysis by sub-groups ▪ Meta-regression ▪ Other 	<p>Yes; partially; no; not applicable</p> <p>Coding guide:</p> <p>YES: Explanatory factors clearly described and appropriate methods used to explore heterogeneity</p> <p>PARTIALLY: Explanatory factors described but for meta-analyses, sub-group analysis or meta-regression not reported (when they should have been)</p> <p>NO: No description or analysis of likely explanatory factors</p> <p>NOT APPLICABLE: e.g. too few studies, no important differences in the results of the included studies, or the included studies were</p>

Question	Criteria
	so dissimilar that it would not make sense to explore heterogeneity of the results
<p>B.7 Overall - how much confidence do you have in the methods used to analyze the findings relative to the primary question addressed in the review?</p> <p>Summary assessment score B relates to the five questions in this section, regarding the analysis.</p> <p>High confidence applicable when all the answers to the questions in section B are assessed as 'yes'.</p> <p>Low confidence applicable when any of the following are assessed as 'NO' above: critical characteristics of the included studies not reported (B1), not describing the extent of heterogeneity (B3), combining results inappropriately (B4), reporting evidence inappropriately (B5).</p> <p>Medium confidence applicable for any other: i.e. the "Partial" option is used for any of the 6 preceding questions or questions and/or B.2 and/ or B.6 are assessed as 'no'.</p>	<p>Low confidence (limitations are important enough that the results of the review are not reliable)</p> <p>Medium confidence (limitations are important enough that it would be worthwhile to search for another systematic review and to interpret the results of this review cautiously, if a better review cannot be found)</p> <p>High confidence (only minor limitations)</p>
Section C: Overall assessment of the reliability of the review	
<p>C.1 Are there any other aspects of the review not mentioned before which lead you to question the results?</p>	<ul style="list-style-type: none"> ▪ Additional methodological concerns – only one person reviewing ▪ Robustness ▪ Interpretation ▪ Conflicts of interest (of the review authors or for included studies) ▪ Other ▪ No other quality issues identified
<p>C.2 Are there any mitigating factors which should be considered in determining the reviews reliability?</p>	<ul style="list-style-type: none"> ▪ Limitations acknowledged ▪ No strong policy conclusions drawn (including in abstract/ summary) ▪ Any other factors
<p>C.3 Based on the above assessments of the methods how would you rate the reliability of the review?</p> <p>Low confidence in conclusions about effects: Medium confidence in conclusions about effects: The systematic review has the following limitations... High confidence in conclusions about effects: If applicable: The review has the following minor limitations... Coding guide:</p> <p>High confidence in conclusions about effects: high confidence noted overall for sections A and B, unless moderated by answer to C1.</p> <p>Medium confidence in conclusions about effects: medium confidence noted overall for sections A or B, unless moderated by answer to C1 or C2.</p> <p>Low confidence in conclusions about effects: low confidence noted overall for sections A or B, unless moderated by answer to C1 or C2.</p> <p>Limitations should be summarized above, based on notes from Sections A, B and C.</p>	

Note: This checklist has been adapted from the Supporting the Use of Research Evidence (SURE) Collaboration guides (Lewin et al. 2009).

6.1. Dealing with multicomponent interventions

Through our data extraction process we identified a large number of studies which included multiple components. These studies were categorized based on the interventions included and patterns were assessed to see whether certain components were often combined. This process led to the creation of four new intervention categories in the map, all of which encompassed multiple components. Three of these categories were created at the intervention group level, meaning that despite there being no trend in terms of specific intervention categories, interventions from specific groups were commonly implemented together. The final category contained a mix of all variations which were uncommon.

6.2. Dealing with missing data

In instances where there was missing or incomplete data, we would have made every effort to contact study authors to obtain the required information. In line with recommendations on collating data from study authors (see Mullan et al. 2009), we would have reported the number of studies for which authors were contacted, the information requested, any important details of the method of eliciting information and the response of authors to the request. For our EGM no missing data was identified and so there was no need to proceed with this process.

APPENDIX 7. VULNERABILITY AND FOOD INSECURITY OF COUNTRIES

Region/Country	Vulnerability to emergency	Food insecurity of population	No. of identified impact evaluations
East Asia and Pacific			11
Australia	Not vulnerable	Food secure	0
Brunei Darussalam	Not vulnerable	Food insecure	0
Cambodia	Not vulnerable	Food insecure	0
China	Not vulnerable	Food secure	0
Fiji	Not vulnerable	Food insecure	1
Indonesia	Not vulnerable	Food insecure	3
Japan	Not vulnerable	Food secure	0
Kiribati	Not vulnerable	Food insecure	0
Korea DPR	Not vulnerable	NA	0
Korea Republic of	Not vulnerable	Food secure	0
Lao PDR	Not vulnerable	Food insecure	1
Malaysia	Not vulnerable	Food secure	0
Marshall Islands	Not vulnerable	NA	0
Micronesia	Not vulnerable	NA	0
Mongolia	Not vulnerable	Food insecure	3
Myanmar	Vulnerable	Food insecure	1
Nauru	Not vulnerable	NA	0
New Zealand	Not vulnerable	Food secure	0
Palau	Not vulnerable	NA	0
Papua New Guinea	Vulnerable	Food insecure	0
Philippines	Vulnerable	Food insecure	2
Samoa	Not vulnerable	Food insecure	0
Singapore	Not vulnerable	Food secure	0
Solomon Islands	Not vulnerable	Food insecure	0
Thailand	Not vulnerable	Food secure	0
Timor-Leste	Not vulnerable	Food insecure	0
Tonga	Not vulnerable	NA	0
Tuvalu	Not vulnerable	NA	0
Vanuatu	Not vulnerable	Food insecure	0
Viet Nam	Not vulnerable	Food secure	0
Europe and Central Asia			4
Albania	Not vulnerable	Food insecure	0
Armenia	Not vulnerable	Food insecure	1
Austria	Not vulnerable	Food secure	0
Azerbaijan	Vulnerable	Food secure	0
Belarus	Not vulnerable	Food secure	0
Belgium	Not vulnerable	Food secure	0

Region/Country	Vulnerability to emergency	Food insecurity of population	No. of identified impact evaluations
Bosnia and Herzegovina	Not vulnerable	Food secure	0
Bulgaria	Not vulnerable	Food secure	0
Croatia	Not vulnerable	Food secure	0
Cyprus	Not vulnerable	Food secure	0
Czech Republic	Not vulnerable	Food secure	0
Denmark	Not vulnerable	Food secure	0
Estonia	Not vulnerable	Food secure	0
Finland	Not vulnerable	Food secure	0
France	Not vulnerable	Food secure	0
Georgia	Not vulnerable	Food insecure	0
Germany	Not vulnerable	Food secure	0
Greece	Not vulnerable	Food secure	0
Hungary	Not vulnerable	Food secure	0
Iceland	Not vulnerable	Food secure	0
Ireland	Not vulnerable	Food secure	0
Italy	Not vulnerable	Food secure	0
Kazakhstan	Not vulnerable	Food secure	0
Kyrgyzstan	Not vulnerable	Food insecure	0
Latvia	Not vulnerable	Food secure	0
Liechtenstein	Not vulnerable	NA	0
Lithuania	Not vulnerable	Food secure	0
Luxembourg	Not vulnerable	Food secure	0
Moldova Republic of	Not vulnerable	Food insecure	0
Montenegro	Not vulnerable	Food secure	0
Netherlands	Not vulnerable	Food secure	0
North Macedonia	Not vulnerable	Food secure	0
Norway	Not vulnerable	Food secure	0
Poland	Not vulnerable	Food secure	0
Portugal	Not vulnerable	Food secure	0
Romania	Not vulnerable	Food secure	0
Russian Federation	Not vulnerable	Food secure	0
Serbia	Not vulnerable	Food secure	0
Slovakia	Not vulnerable	Food secure	0
Slovenia	Not vulnerable	Food secure	0
Spain	Not vulnerable	Food secure	0
Sweden	Not vulnerable	Food secure	0
Switzerland	Not vulnerable	Food secure	0
Tajikistan	Not vulnerable	Food insecure	0
Turkey	Not vulnerable	Food secure	3
Turkmenistan	Not vulnerable	NA	0
Ukraine	Vulnerable	Food secure	0
United Kingdom	Not vulnerable	Food secure	0

Region/Country	Vulnerability to emergency	Food insecurity of population	No. of identified impact evaluations
Uzbekistan	Not vulnerable	Food secure	0
Latin America and the Caribbean			10
Antigua and Barbuda	Not vulnerable	NA	0
Argentina	Not vulnerable	Food secure	0
Bahamas	Not vulnerable	NA	0
Barbados	Not vulnerable	Food secure	0
Belize	Not vulnerable	Food secure	0
Bolivia	Not vulnerable	Food secure	1
Brazil	Not vulnerable	Food secure	1
Chile	Not vulnerable	Food secure	0
Colombia	Vulnerable	Food secure	3
Costa Rica	Not vulnerable	Food secure	0
Cuba	Not vulnerable	Food secure	0
Dominica	Not vulnerable	NA	0
Dominican Republic	Not vulnerable	Food secure	0
Ecuador	Not vulnerable	Food secure	1
El Salvador	Not vulnerable	Food insecure	0
Grenada	Not vulnerable	Food insecure	0
Guatemala	Vulnerable	Food insecure	0
Guyana	Not vulnerable	Food insecure	0
Haiti	Vulnerable	Food insecure	2
Honduras	Vulnerable	Food insecure	0
Jamaica	Not vulnerable	Food secure	0
Mexico	Vulnerable	Food secure	1
Nicaragua	Not vulnerable	Food secure	1
Panama	Not vulnerable	Food secure	0
Paraguay	Not vulnerable	Food secure	0
Peru	Not vulnerable	Food secure	0
Saint Kitts and Nevis	Not vulnerable	NA	0
Saint Lucia	Not vulnerable	NA	0
St Vincent & the Grenadines	Not vulnerable	NA	0
Suriname	Not vulnerable	NA	0
Trinidad and Tobago	Not vulnerable	NA	0
Uruguay	Not vulnerable	Food secure	0
Venezuela	Vulnerable	Food insecure	0
Middle East and North Africa			26
Algeria	Not vulnerable	Food secure	1
Bahrain	Not vulnerable	Food secure	0
Djibouti	Not vulnerable	Food insecure	0
Egypt	Not vulnerable	Food insecure	0
Iran	Vulnerable	Food secure	0
Iraq	Vulnerable	Food insecure	1

Region/Country	Vulnerability to emergency	Food insecurity of population	No. of identified impact evaluations
Israel	Not vulnerable	Food secure	0
Jordan	Not vulnerable	Food secure	3
Kuwait	Not vulnerable	Food secure	0
Lebanon	Not vulnerable	Food secure	12
Libya	Vulnerable	Food insecure	0
Malta	Not vulnerable	Food secure	0
Morocco	Not vulnerable	Food secure	0
Oman	Not vulnerable	Food secure	0
Palestine	Not vulnerable	Food insecure	2
Qatar	Not vulnerable	Food secure	0
Saudi Arabia	Not vulnerable	Food secure	0
Syria	Vulnerable	Food insecure	1
Tunisia	Not vulnerable	Food secure	0
United Arab Emirates	Not vulnerable	Food secure	0
Yemen	Vulnerable	Food insecure	6
North America			0
Canada	Not vulnerable	Food secure	0
United States of America	Not vulnerable	Food secure	0
South Asia			21
Afghanistan	Vulnerable	Food insecure	4
Bangladesh	Vulnerable	Food insecure	6
Bhutan	Not vulnerable	Food insecure	0
India	Vulnerable	Food insecure	6
Maldives	Not vulnerable	NA	0
Nepal	Not vulnerable	Food insecure	2
Pakistan	Vulnerable	Food insecure	3
Sri Lanka	Not vulnerable	Food insecure	0
Sub-Saharan Africa			79
Angola	Not vulnerable	Food insecure	1
Benin	Not vulnerable	Food insecure	0
Botswana	Not vulnerable	Food insecure	0
Burkina Faso	Vulnerable	Food insecure	0
Burundi	Vulnerable	Food insecure	0
Cabo Verde	Not vulnerable	Food insecure	0
Cameroon	Vulnerable	Food insecure	0
Central African Republic	Vulnerable	Food insecure	0
Chad	Vulnerable	Food insecure	0
Comoros	Not vulnerable	Food insecure	0
Congo	Vulnerable	Food insecure	0
Congo DR	Vulnerable	Food insecure	7
Côte d'Ivoire	Not vulnerable	Food insecure	0

Region/Country	Vulnerability to emergency	Food insecurity of population	No. of identified impact evaluations
Equatorial Guinea	Not vulnerable	NA	0
Eritrea	Vulnerable	NA	0
Eswatini	Not vulnerable	Food insecure	0
Ethiopia	Vulnerable	Food insecure	11
Gabon	Not vulnerable	Food insecure	0
Gambia	Not vulnerable	Food insecure	0
Ghana	Not vulnerable	Food insecure	2
Guinea	Not vulnerable	Food insecure	0
Guinea-Bissau	Not vulnerable	Food insecure	0
Kenya	Vulnerable	Food insecure	15
Lesotho	Not vulnerable	Food insecure	0
Liberia	Not vulnerable	Food insecure	1
Madagascar	Vulnerable	Food insecure	0
Malawi	Not vulnerable	Food insecure	5
Mali	Vulnerable	Food insecure	1
Mauritania	Not vulnerable	Food insecure	0
Mauritius	Not vulnerable	Food insecure	0
Mozambique	Vulnerable	Food insecure	1
Namibia	Not vulnerable	Food insecure	0
Niger	Vulnerable	Food insecure	4
Nigeria	Vulnerable	Food insecure	5
Rwanda	Not vulnerable	Food insecure	0
Sao Tome and Principe	Not vulnerable	Food insecure	0
Senegal	Not vulnerable	Food insecure	2
Seychelles	Not vulnerable	Food insecure	0
Sierra Leone	Not vulnerable	Food insecure	1
Somalia	Vulnerable	Food insecure	5
South Africa	Vulnerable	Food secure	0
South Sudan	Vulnerable	Food insecure	4
Sudan	Vulnerable	Food insecure	0
Tanzania	Vulnerable	Food insecure	2
Togo	Not vulnerable	Food insecure	0
Uganda	Vulnerable	Food insecure	10
Zambia	Not vulnerable	Food insecure	2
Zimbabwe	Not vulnerable	Food insecure	0

Notes: The vulnerability score is derived from the INFORM Risk Index 2023 (INFORM, 2022). Countries were categorized as vulnerable if they scored as either high or very-high risk. Food security of a population was derived from the Food Security Index, part of the Global Food Security Q2 2022 report (Deep Knowledge Analytics, 2022). To assess food insecurity, the Access to Food score, which isolates access to food from other factors such as crisis level and resilience, was used. Countries were classified as food secure when they score above the median score (6.26), those which scored 6.26 or below were categorized as food insecure.

APPENDIX 8. CHARACTERISTICS OF THE INCLUDED SYSTEMATIC REVIEWS

Title	Intervention category	Interventions	Outcomes	Confidence level
Akparibo et al. (2017)	Food, cash & in-kind transfers	Direct provision of food	Health; Nutrition	Medium
Als et al. (2020)	Water security interventions	Direct provision of safe water and purification systems	Health	Low
Aurino et al. (2022)	Food, cash & in-kind transfers; Multicomponent interventions	Cash transfers; Direct provision of food; Other in-kind transfers; For-work interventions; Food vouchers; Multicomponent cash, food or in-kind transfer	Health; Nutrition; Food intake; Economic	Low
Balhara et al. (2017)	Food, cash & in-kind transfers; Nutrition interventions	Direct provision of food; For-work interventions; Nutrition education and support	Health; Nutrition	Low
Blanchet et al. (2017)	Nutrition interventions; Water security interventions; Food, cash & in-kind transfers	Nutrition education and support; Direct provision of safe water and purification systems; Extension and maintenance of water storage capacity; Direct provision of food; Other vouchers	Health; Nutrition	Low
Carroll et al. (2017)	Food, cash & in-kind transfers; Nutrition interventions	Direct provision of food; Protection and promotion of nutritional status; Treatment of malnutrition	Health; Nutrition	Low

Title	Intervention category	Interventions	Outcomes	Confidence level
Doocy and Tappis (2016)	Food, cash & in-kind transfers	Cash transfers; For-work interventions; Food vouchers	Food intake; Food decisions; Economic; Agricultural production	High
Ekezie et al. (2020)	Water security interventions; Nutrition interventions	Direct provision of safe water and purification systems; Protection and promotion of nutritional status	Health	Low
Hall (2011)	Nutrition interventions; Food, cash & in-kind transfers	Protection and promotional of nutritional status; Cash transfers	Nutrition; Food intake; Health	Low
Horst (2019)	Nutrition interventions	Protection and promotion of nutritional status	Nutrition	Medium
Pega et al. (2015)	Food, cash & in-kind transfers	Cash transfers	Health; Food intake; Nutrition; Agricultural production	High
Ramesh et al. (2015)	Water security interventions	Extension and maintenance of water storage capacity; Direct provision of safe water and purification systems	Health	Medium
Rodo et al. (2022)	Nutrition interventions; Food, cash & in-kind transfers	Nutrition education and support; Cash transfers	Nutrition	Low
Shah et al. (2021)	Food, cash & in-kind transfers; Nutrition interventions	Direct provision of food; Treatment of malnutrition; Nutrition education and support	Nutrition	Low
Trako and Jeong (2022)	Food, cash & in-kind transfers	Cash transfers; Direct provision of food; Other vouchers; For-work interventions	Agricultural production; Food decisions; Food intake; Economic; Nutrition	Low

Title	Intervention category	Interventions	Outcomes	Confidence level
van Daalen et al. (2022)	Food, cash & in-kind transfers	Cash transfers	Health; Nutrition; Food intake	Medium
Yates et al. (2017)	Water security interventions	Direct provision of safe water and purification systems	Food safety	High

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