



Food and Agriculture
Organization of the
United Nations

Iraq

Restoration of agriculture and water systems sub-programme 2018–2020

FAO's component of the United Nations' Recovery
and Resilience Programme



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ISBN 978-92-5-130957-5

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Contents

Abbreviations	v
Executive summary	vii
Introduction	1
Relevance	3
General context	3
Humanitarian context	3
Role of agriculture in Iraq	5
Damage to the agriculture sector in retaken areas	6
Theory of change	9
Alignment and strategic fit	12
National Development Plan (2018–2022)	12
Social Protection Strategic Roadmap (2015–2019)	12
FAO Country Programming Framework (2018–2022)	13
United Nations’ Recovery and Resilience Programme (2018–2020)	14
Global Sustainable Development Goals (2016–2030)	14
Sub-programme framework	15
Goal	15
Objective	15
Target beneficiaries	15
Approach/Methodology	17
Components and key intervention areas	19
Cost estimate	26
FAO’s comparative advantage	28
Implementation arrangements	30
Institutional framework	30
Monitoring and reporting	31
Communication and outreach	32
Annex I – Logical framework matrix	33
Annex II – Key intervention areas	45

Figures

Figure 1. FAO’s programmatic approach for former ISIL-held governorates	11
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Tables

Table 1. RRP sub-programme components and project concepts	26
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Abbreviations

CAHW	Community animal health worker
CFW	Cash for work
CSA	Climate-smart agriculture
FAO	Food and Agriculture Organization of the United Nations
FBS	Farmer business school
FFS	Farmer field school
FPMIS	Field Programme Management Information System (of FAO)
FSNIS	Food Security and Nutrition Information System
GDP	Gross domestic product
IDP	Internally displaced person
IOM	International Organization for Migration
IPM	Integrated pest management
IRFD	Iraq Reconstruction and Development Framework (of the Government of Iraq)
ISIL	Islamic State of Iraq and the Levant
KIA	Key intervention area
LoA	Letter of Agreement
MDT	Multidisciplinary team
MoA	Ministry of Agriculture
MoHE	Ministry of Health and Environment
MoP	Ministry of Planning
MoWR	Ministry of Water Resources
NGO	Non-governmental Organization
PMG	Producer marketing group
PPCP	Public-private-community partnerships
RNE	Regional Office for the Near East and North Africa (of FAO)
RRP	Recovery and Resilience Programme (of the United Nations)
SBSTC	State Board for Seed Testing and Certification (of the Government of Iraq)
SDG	Sustainable Development Goal
SWRLI	Strategy for Water and Land Resources in Iraq (of the Government of Iraq)
TAD	Transboundary animal disease
UNCT	United Nations Country Team
USD	United States of America Dollar
WFP	World Food Programme
WUA	Water users' association

Executive summary

There is a strong imperative to rebuild Iraq's agriculture sector as it is a major provider of employment and income in rural and peri-urban areas. This will allow for the return of millions of internally displaced people (IDP) in Iraq to their areas of origin, following the retaking of Iraqi areas that used to be under the control of the Islamic State of Iraq and the Levant (ISIL) – i.e. all or parts of the five affected governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din. The impact of conflict caused by ISIL on the agriculture sector has been devastating and includes huge population movements, destruction of and damage to water systems, irrigation facilities and other agricultural infrastructure, disruption of value chains and losses of personal assets, crop and livestock production and food supplies.

In response, the Government of Iraq has developed the Iraq Reconstruction and Development Framework (IRFD), which contributes to the Iraq Vision 2030 and National Development Plan (2018–2022). Guided by IRFD, Iraq's United Nations Country Team (UNCT) formulated the Recovery and Resilience Programme (RRP), which prioritizes three (out of nine¹) components to be implemented in the retaken areas with high priority: (i) preventing violent extremism; (ii) restoring communities; and (iii) restoring agriculture and water systems. The RRP was presented at the Kuwait International Conference for Iraq's Reconstruction in February 2018, which was jointly organized by the Government of Iraq, the World Bank and the Kuwait Fund for Arab Economic Development.

This document represents the Food and Agriculture Organization of the United Nations (FAO) sub-programme entitled Restoration of Agriculture and Irrigation Water Systems Sub-programme (2018–2020). It was developed by the FAO country office in Iraq in close collaboration with the Government of Iraq and with support from FAO colleagues at its Regional Office for the Near East and Northern Africa (RNE) and headquarters. FAO's Restoration of Agriculture and Irrigation Water Systems Sub-programme will make a significant contribution to the United Nations' two-year Iraq RRP by fast tracking the social dimension of reconstruction and rehabilitation in the retaken areas of central Iraq.

The sub-programme aims to improve food security and nutrition and reduce poverty for the rural and peri-urban populations of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates affected by the conflict – including returnees and remainees – through the restoration of irrigation systems and crop and livestock production systems and value chains, and support to stakeholder evidence-based agrifood systems planning, programming, and monitoring and evaluation. With support from prospective resource partners, the two-year sub-programme will be implemented in the areas prioritized for recovery and resilience programming with

¹ The other six components have a national coverage. These are: (i) promoting sustainable returns; (ii) decentralizing basic services; (iii) supporting survivors; (iv) expanding political participation; (v) supporting youth and; (vi) promoting community reconciliation.

a focus on vulnerable smallholder farmers and livestock owners and the rural poor of rural and peri-urban areas (in particular women, female-headed households and youth).

The sub-programme comprises three components and 15 key intervention areas (KIAs).

Component 1: Restoring irrigated water supplies across conflict-affected areas

KIA 1.1. Support to improved water-sharing arrangements in central Iraq

KIA 1.2. Support to the rehabilitation of water control and irrigation systems in central Iraq

KIA 1.3. Support to improved irrigation water efficiency and management in central Iraq

Component 2: Restoring and diversifying smallholder farming systems as a transition to sustainable agriculture

KIA 2.1. Support to the improved availability of quality cereal and legume seeds for vulnerable family farming returnees and remainees

KIA 2.2. Support to improved small-scale animal fodder production, conservation and marketing

KIA 2.3. Support to vulnerable family farming returnees and remainees through the rehabilitation and strengthening of vegetable production and marketing

KIA 2.4. Support to vulnerable family farming returnees and remainees through increased homestead-based poultry production

KIA 2.5. Support to vulnerable family farming returnees and remainees through the restocking of small ruminants and safeguarding animal survival, health and production

KIA 2.6. Support to vulnerable family farming returnees and remainees through improved homestead-based agrifood processing and microenterprise development

KIA 2.7. Support to vulnerable family farming returnees and remainees through improved small-scale dairy processing and marketing

Component 3: Strengthening information and early warning systems on food security, nutrition and transboundary threats

KIA 3.1. Support to conflict-sensitivity analysis and monitoring at national, governorate and programming levels

KIA 3.2. Improved understanding of food security and nutrition, including improved stakeholder capacities to conduct and analyse socio-economic and biophysical assessments

KIA 3.3. Well-coordinated and networked food security, nutrition and natural resources information system to assess and monitor the situation in the retaken governorates

KIA 3.4. Support to the recovery and upgrading of Iraqi border surveillance and control of transboundary plant diseases and pests

KIA 3.5. Support to the recovery and upgrading of transboundary animal disease surveillance and control systems in border areas of Iraq

Sub-programme interventions will build on existing efforts and are designed to help ensure that people see tangible improvements in their daily lives at the start of the reconstruction process, rather than waiting years to benefit from large-scale infrastructure projects and structural reforms – in line with the Government of Iraq’s commitment to multidimensional reconstruction. In this context, the sub-programme interventions will contribute to the Government’s National Development Plan (2018–2022) and Social Protection Strategic Roadmap (2015–2019), the FAO Country Programming Framework (2018–2022), the Global Sustainable Development Goals (2016–2030), as well as two components of the United Nations’ RRP (i.e. “restoring communities” and “restoring agriculture and water systems”).

FAO will also support relevant ministries of the Government of Iraq (i.e. the Ministry of Agriculture, the Ministry of Water Resources and the Ministry of Health and Environment for agriculture and irrigation water-related intervention and the Ministry of Migration and Displacement and the Ministry of Labour and Social Affairs for social protection-related interventions) in providing assistance to the repair, rehabilitation, replacement and/or strengthening of agricultural infrastructure, equipment, value chains and support services in rural and peri-urban areas for climate-smart smallholder crop and animal production (including water supplies for irrigated farming systems).

While equal opportunities will be given to women in affected rural and peri-urban areas to participate in and benefit from all sub-programme interventions, they will be specifically targeted for homestead-based vegetable, poultry and dairy production and processing ventures. Similarly, the affected rural and peri-urban youth (especially unemployed agricultural graduates) will be encouraged to benefit from training to gain employment as agrifood processors, farmer field school and

farmer business school facilitators, community animal health workers, market information system operators and food security and nutrition data collectors and analysts.

It is estimated that the sub-programme will benefit 167 400 vulnerable smallholder and small-scale farming families and unemployed labourers and 1 124 government and non-governmental decision-makers, service providers and facilitators/workers. The total cost of the two-year Restoration of Agriculture and Irrigation Water Systems Sub-programme is estimated at USD 90 million.

Introduction

Following the retaking of Iraqi areas that used to be under the control of the Islamic State of Iraq and the Levant (ISIL) – i.e. all or parts of the five affected governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din – there is an imperative to rebuild economic sectors such as agriculture, a major provider of employment and income in rural and peri-urban areas, to allow for the return of millions of internally displaced people (IDP) in Iraq to their areas of origin. The impact of conflict caused by ISIL on the agriculture sector has been devastating and includes huge population movements, destruction of and damage to water systems, irrigation facilities and other agricultural infrastructure, disruption of value chains and losses of personal assets, crop and livestock production and food supplies.

In response, the Government of Iraq has developed the Iraq Reconstruction and Development Framework (IRFD), which contributes to the Iraq Vision 2030 and National Development Plan (2018–2022). Guided by IRFD, Iraq's United Nations Country Team (UNCT) formulated the Recovery and Resilience Programme (RRP), which prioritizes three (out of nine²) components to be implemented in the retaken areas with high priority: (i) preventing violent extremism; (ii) restoring communities; and (iii) restoring agriculture and water systems. The RRP was presented at the Kuwait International Conference for Iraq's Reconstruction in February 2018, which was jointly organized by the Government of Iraq, the World Bank and the Kuwait Fund for Arab Economic Development. The conference pledged international support for a structured approach to “build back better” under the framework of the IRFD. The conference brought together different investors and development actors³ to review investment priorities, worth USD 88 billion in funding needs. To date, USD 30 billion has been committed in the form of credit, investments and grants.

The recent policy directions in Iraq's development give significant priority to the agriculture sector and present a strategic opportunity for the Food and Agriculture Organization of the United Nations (FAO) to lead a comprehensive resilience building programme that addresses the humanitarian-development nexus over the coming years. Subsequently, FAO's Regional Office for the Near East and North Africa (RNE) fielded a multidisciplinary team (MDT) to prepare a two-year sub-programme for “restoration of agriculture and irrigation water systems of retaken areas” as part of the United Nations RRP for the five affected governorates. The MDT consisted of the following international specialists: (i) programme development; (ii) agronomy/agricultural research and extension; (iii) animal health; (iv) water resources development and irrigation; (v) agricultural value chain development; and (vi) cash-

² The other six components have a national coverage. These are: (i) promoting sustainable returns; (ii) decentralizing basic services; (iii) supporting survivors; (iv) expanding political participation; (v) supporting youth and; (vi) promoting community reconciliation.

³ 76 Country and International Organizations, 51 Development Funds, 107 NGOs and 1 850 private sector companies.

based transfers. The MDT was complemented by FAO national water, crop and livestock specialists. Following a review of secondary data, the MDT visited Erbil, central Iraq and surrounding areas for one to two weeks and met with stakeholders of the agriculture sector from affected governorates – i.e. relevant national and governorate-level government agencies, international and national non-governmental organizations (NGOs), civil society organizations and concerned United Nations agencies and resource partners – and developed and agreed on a sub-programme framework.

The Restoration of Agriculture and Irrigation Water Systems Sub-programme (2018-2020) document (and its three components and 15 key intervention areas (KIAs)) was prepared by the FAO country office in Iraq – with support from FAO's RNE and headquarters – in parallel with the submission of 15 similar project concept notes to the UNCT for inclusion under its RRP and presentation to a resource partner conference scheduled for mid-2018 (i.e. 12 from FAO under the Restoring Agriculture and Water Systems component and three jointly from FAO and the International Organization for Migration (IOM) (two) and the United Nations Mine Action Service (one) under the Revitalizing Communities and Restoring Agriculture and Water Systems components). In this context, the sub-programme aims to improve food security and nutrition and reduce poverty for the rural and peri-urban populations of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates affected by the conflict – including both returnees and remainees – through the restoration of irrigation water systems and crop and livestock production systems and value chains, and support to stakeholder evidence-based agrifood systems planning, programming, and monitoring and evaluation. With support from prospective resource partners, the two-year sub-programme will be implemented in the areas prioritized for recovery and resilience programming with a focus on vulnerable smallholder farmers and livestock owners and the rural poor of rural and peri-urban areas (in particular women, female-headed households and youth).

Relevance

General context

Iraq is an oil-rich upper middle-income country with a population of 36.4 million of which about a third resides in rural areas. After the public service and trade sectors, the agriculture sector represents a small, but vital, component of the economy and accounts for 8.6 percent of gross domestic product (GDP). Agriculture is the third largest provider of employment in the country, and the largest source of employment for the rural population. The unemployment rate in Iraq is estimated at 11 percent nationally (i.e. 7 percent of males and 13 percent of females). Food insecurity is higher in rural areas (5.1 percent) compared with 1.7 percent in urban areas⁴. In 2012, rural poverty rates were already 31 percent, and they will have seen significant increases for large parts of the country affected by the flow of IDPs as a result of the crisis. Main drivers of poverty and food insecurity in the country are conflict and insecurity, rapid population growth and the effects of climate change including increasing water scarcity and accelerated desertification. Combined, these have resulted in clearly reduced prospects for viable rural and peri-urban based rainfed and irrigated agricultural and livestock production that provide sustainable income-generating opportunities for rural communities.

Humanitarian context

As of January 2018, and based on the current United Nations Office for the Coordination of Humanitarian Affairs population estimates, 8.3 million people will be in need of some form of humanitarian assistance during 2018⁵. It is estimated that about 60 percent of the total number of people in need will be located at the epicentres of the conflict, displacement and return areas across Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates.

Over the course of the four-year crisis, nearly 6 million people were displaced by the ISIL conflict in Iraq⁶. During the past few years terrain has gradually been retaken. By the end of June 2018, an estimated 3.9 million IDPs had returned to their area of origin, with 1.8 million returnees in 2017 alone. There were still 2 million IDPs at the end of June 2018, of which 590 000 reside in formal camp settings⁷. By December 2017, the largest return flows were to the governorates of Anbar (1.2 million, predominantly in the districts of Ramadi, Heet and Fallujah), Ninewa (1.1 million, predominantly in the districts of Mosul, Telafar and Al-Hamdaniya) and Salah al-Din (0.5 million). Almost all (96 percent) of Iraq's 3.2 million returnees reportedly live in

⁴ WFP/FAO Comprehensive Food Security Vulnerability Assessment, 2016

⁵ Humanitarian Needs Overview 2018

⁶ IOM-Iraq Mission, Displacement Tracking Matrix; 30 June 2018

⁷ CCCM Cluster Iraq Settlement Status Report, January 31, 2018

their habitual residence. More recently in March of 2018, the largest returnee flows were seen in Ninewa Governorate, accounting for 86 percent (107 292) of all newly identified returnees, of whom almost 78 000 went back to Mosul District⁸.

The same reports suggest that more than 90 percent of IDP households reported that their home in their area of origin was damaged, occupied by a non-owner or contaminated by improvised explosive devices or unexploded ordnance. It was also reported that half of IDP households (52 percent) reported not intending to return to their area of origin, no longer because of a lack of security but due to the destruction of their houses and a lack of financial means to restart their livelihoods. Moreover, looking into main income sources for returnees, about four out of five households depend on a paid job in the public sector as their main source of income with one out of two families also relying on informal commerce/irregular labour. About a third are active in agriculture. The top concern for returnee households upon their return is employment, followed by water/health, non-food household items and shelter/housing conditions. It is evident that there is a clear need for support for these millions of vulnerable IDPs, returnee and remainee households in the five retaken governorates. And, if urgent action is not taken on the daunting tasks of stabilization of the retaken territories, on political and economic reforms and the national reconciliation process, the country could again become a breeding ground for conflict and extremism, exacerbating population movements.

Of the 8.3 million people in need of humanitarian assistance across Iraq, 2 million people are estimated to be food insecure; with the majority (77 percent) women, children and elderly, including female-headed households. A majority of the returnees has been observed to be already food insecure or at elevated risk of becoming food insecure as the negative impact of the conflict prevails – following the loss of their food reserves and various productive assets/resources through looting and/or damage during their displacement. In retaken areas, people continue to rely upon humanitarian assistance, but markets have once again emerged as the main source of food. Many markets in accessible areas have resumed operation and prices have fallen and stabilized in some. Still, the population has limited purchasing power and surveys show that negative coping mechanisms persist, including the sale of productive assets and purchasing food on credit.

⁸ idem

Role of agriculture in Iraq

Agricultural GDP⁹

About 16 percent of Iraq, or 7 million ha, is classified as arable land, of which about 5.9 million ha are under irrigated or rainfed cropping. Most of the country's irrigated agriculture is found in the central and southern governorates and is dependent on the Tigris and Euphrates rivers for most of its water source. About 64 percent of cultivated land was irrigated. Rainfed agriculture is practiced more in the northern governorates. Rainfed areas are significant producers of wheat and barley. Both crops are grown in the winter months and account for one-third of national cereal production. While the same winter crops that are grown in the north are grown in the irrigated areas, farmers also produce rice, dates, cotton, vegetables, fruits, legumes and alfalfa. Livestock production has been an important pillar of Iraq's agriculture sector, representing one-third of the total value of agricultural production. Cattle, goats and sheep are the main livestock in Iraq, supplying meat, wool, milk and skins. Animal husbandry was an important source of income and food for female-headed households in the affected governorates.

The high prices paid by Government for some domestic crops have distorted the market, thus limiting private sector innovations. In the livestock sub-sector, large feed subsidies are provided but imports remain high for some commodities such as milk and poultry. The sub-sector's dependency on government subsidies limits the development of a competitive private agriculture sector, transparent markets and diversified smallholder farming systems. The agriculture sector lacks institutional capacities and requires support from government, non-governmental and development partners to establish well-developed farmers' associations and organizations. This would facilitate the development of the agriculture sector via collective supplies and offer approaches that can enable smallholder producers to be more commercially competitive. Such matters are compounded by structural factors that include limited rural financing, weak research and extension capacities, low-level technologies, the increasing impact of climate change and the construction of dams in neighbouring countries, which is related to a reduction in water inflows and increased salinity.

There are good reasons to believe that the agriculture sector could be a driver of economic growth in post-conflict Iraq in ways that favour the poorest populations most. Both rural and urban households benefit from increased production and lower prices, particularly vulnerable populations, such as female-headed households, which tend to spend a higher proportion of their income on food. Poor households dependent upon low-skill labour benefit from increased demand for workers and

⁹ Most of the statistics available date from pre-ISIL times (2014) and little data has been collected since the governorates were retaken (end of 2017). Therefore, it is difficult to compare and assess the full damage and reduced capacities in-country at sub-national, community, household and individual levels.

increased wages. Supporting smallholder farming families and promoting linkages with market actors should generate jobs for farm labourers.

Damage to the agriculture sector in retaken areas¹⁰

Measuring the scale of the damage to food security and the agriculture sector since the Government of Iraq regained control of central and northwestern Iraq in order to rebuild is a complex task. This is due in part to the fact that agriculture and the conflict in Iraq have been inextricably intertwined, with agriculture often being used as a weapon of war. Throughout the period of its control, ISIL looted harvests and agricultural equipment, sabotaged storage facilities and poisoned land as a form of collective punishment. In the most extreme cases, agriculture itself was militarized, with irrigation pipes appropriated to make improvised explosive devices, and agrochemicals and fertilizers used to make weapons and bombs. Less dramatically, ISIL sought to distort agricultural markets by controlling and reallocating resources. Finally, agriculture was also used by ISIL to fuel the conflict by encouraging production in some areas to generate revenue, even as it neglected or sought to destroy it in others.

Crops sub-sector

Crop production has suffered significant damage and losses, mainly due to: loss of machinery; displacement of local populations (comprising mostly farmers); insecurity; fields littered with unexploded ordnance; looting; destroyed silos, storage and crop processing facilities; lack of seeds and fertilizers; the collapse of government support in providing agricultural inputs and financial dues over the past three years; limited integration between stakeholders; and the absence of technical services. Retaken areas have suffered the most, with wheat and barley production losses amounting to as much as 75 to 80 percent. Ninewa Governorate, in particular, produced virtually no grains or other foods during the four-year period of ISIL control.

The cereals' value chains have two levels of production, which are seeds and grains, and at all stages are under the supervision and control of the Government of Iraq, including the Ministry of Agriculture (MoA) and the Ministry of Trade and Industry. Seed production follows certain regulation and certification schemes to ensure purity and efficiency of the cultivars. In addition, distribution of seeds to cereal farmers is conducted by the governorate directorates of agriculture and after harvesting the grains produced are transported to receiving silos or collection centres based on "receiving plans". Then the grains are distributed to milling centres by the governorate directorates of agriculture and afterwards to distribution agents. At

¹⁰ Information presented here is from FAO's Agriculture Damage and Needs Assessment (2017).

present, farmers' access to such supply and value chains is highly limited in the five retaken governorates.

Currently, only 20 percent of farmers are thought to have access to irrigation, compared with 65 percent prior to the crisis. Much of the existing irrigation infrastructure is in urgent need of repair and reconstruction. Ninewa Governorate has been particularly affected, as ISIL looted and destroyed over 90 percent of pipes, sprinklers, water pumps and channels and filled in some of the wells. The lack of access to spare parts for generators has also been a limiting factor for irrigation through canals. Essential machinery and tools used by farmers have either been looted or damaged during the armed conflict. Farmers' financial constraints, combined with the higher prices of equipment, prevent most from repairing or replacing their equipment and tools.

Livestock sub-sector

A significant number of livestock were lost, dead or injured due to the conflict. On average, as much as three-quarters of cattle, sheep, goats and buffaloes across affected areas were lost, although in some locations this figure reached as high as 85 to 95 percent. Poultry losses were significant in all areas; in some cases, flock sizes numbering in the hundreds fell to virtually zero. According to farmers, rebuilding herds will require improved security, temporary shelters, replanting of pastures and clearance of unexploded ordinance. In addition, feed, fodder and government emergency veterinary services are needed, as well as the support to improve the sector's economic viability.

Supply and market chains

Before the crisis, most inputs were imported and publicly distributed to farmers by the Ministry of Agriculture's State Company for Agricultural Supplies. Some imported inputs were also privately distributed through wholesalers and retailers, and a smaller share was produced domestically and distributed through either public or private chains. Accordingly, important formal arrangements included government support through the subsidization of agricultural inputs, relaxed taxation on imports and a system that ensured input quality control. Due to severe disruptions to the State Company for Agricultural Supplies system in retaken areas, some places have not received government inputs for more than four years. The horticultural producers lack the support of the State Company for Agricultural Supplies as they depend mainly on the local market to source their agricultural inputs. Input suppliers are increasingly playing a significant role in providing advice and extension to farmers and beginning to replace the formal extension services. The system now relies mainly on importers and distributors dealing directly with private wholesalers but this partly excludes cereal producers as they receive some of their agricultural inputs from MoA's governorate directorates of agriculture. There is a lack of quality control mechanisms and restrictions have been imposed on the importation and transportation of fertilizers

and pesticides because of their potential use for making explosive devices. Physical structures such as shops, markets, roads and transport storage facilities have also suffered significant damage.

Rural employment and income

Overall, life for Iraqis in retaken areas is still difficult due to insecurity prevailing in some areas, widespread destruction of public infrastructure and private assets and lack of basic services. While wage labour in agriculture and the selling of agricultural goods were the most common forms of employment in rural areas, more than half the workforce is now unemployed. Before the crisis, an average farm employed around 14 workers. However, farmers can no longer afford this and are currently relying on family members to carry out most activities. In most cases, inactive farmers, eager to generate much-needed income, are now taking jobs in construction or transportation, or working for local municipalities.

Farmers in retaken governorates who have now returned reveal that most, if not all, crops, livestock and agricultural machinery and tools left behind were lost. Consequently, farmers' income from current activities has been drastically reduced. Payment delays from the Government to farmers for crops purchased over the last three years has exacerbated the situation. Food insecurity has become more widespread. People are not only relying on less expensive and less nutritious food but are also reducing the number of daily meals. Most reported that they have borrowed money to provide for their families.

Theory of change

FAO will seize the opportunity of the reconstruction phase to rehabilitate the agriculture sector following the principles of sustainable food and agriculture in an integrated way to achieve Zero Hunger. These principles are:

- increase productivity
- protect and enhance natural resources
- improve livelihoods and people's well-being
- enhance the resilience of ecosystems, people and communities
- adapt governance to new challenges.

Irrigated and rainfed crops and livestock remain an important source of livelihoods for the bulk of Iraqis living in rural and peri-urban areas. These must therefore be an integral part of the rehabilitation efforts in the five retaken governorates. Investing in agricultural livelihood interventions will help food insecure households to produce much-needed food, generate jobs for the rural poor, and reduce their dependency on social assistance programmes (provided by the Government or partners) and humanitarian assistance. Given that vulnerable smallholder farmers lack access to basic services and physical and economic access to agricultural inputs (because of insecurity, damaged infrastructure, destroyed or stolen personal assets and greatly reduced purchasing power), and that markets are disrupted and/or destroyed in many areas, rehabilitation efforts need to include support to supply and market chains.

FAO is well placed to operate in the humanitarian-development nexus by supporting agricultural livelihoods for returnee and remainee communities. Interventions include improving access to social protection schemes and social safety net interventions (e.g. cash transfers and short-term employment through cash for work (CFW)); providing agricultural input packages; training in modern climate-smart technologies and practices; and strengthening market linkages to revitalize food production, markets and value chains, increase income generation and create new longer-term employment opportunities. This integrated approach includes the repair, rehabilitation, replacement and/or strengthening of agricultural infrastructure and equipment, developing value chains, and supporting the Government of Iraq to restore its agricultural services to the sector to adopt climate-smart and conflict-sensitive smallholder crop and animal production.

Assessments and analysis, early warning and pest and disease surveillance, and the use of participatory approaches to engage with communities, will validate/direct the intervention pathways and help identify beneficiary groupings. Close collaboration with the Government of Iraq, United Nations partners, civil society and the private sector will ensure well-coordinated and efficient distribution of inputs and services.

An important element of FAO's approach is the rebuilding of human capital in the sector with active support from the Government of Iraq's technical officials, mainly from MoA, the Ministry of Water Resources (MoWR) and the Ministry of Labour and Social Affairs, as local change agents. The sub-programme will dedicate resources for

the capacity development of smallholder farmers and government officials and technicians. The integration of longer-term capacity development, climate-smart agriculture (CSA), natural resources management and value chain development through different types of interventions will reinforce the livelihood restoration and resilience of earlier short-term responses and lead to the sustainable recovery of Iraq's agriculture sector. Sub-programme interventions will be built in synergy with non-sectoral activities to better access to meet basic needs. In this context, demands of the affected population will be supported in parallel to a supply-focused approach for agriculture and water system goods, services and works.

The following flow chart provides a simplified version of the logic used by the sub-programme.

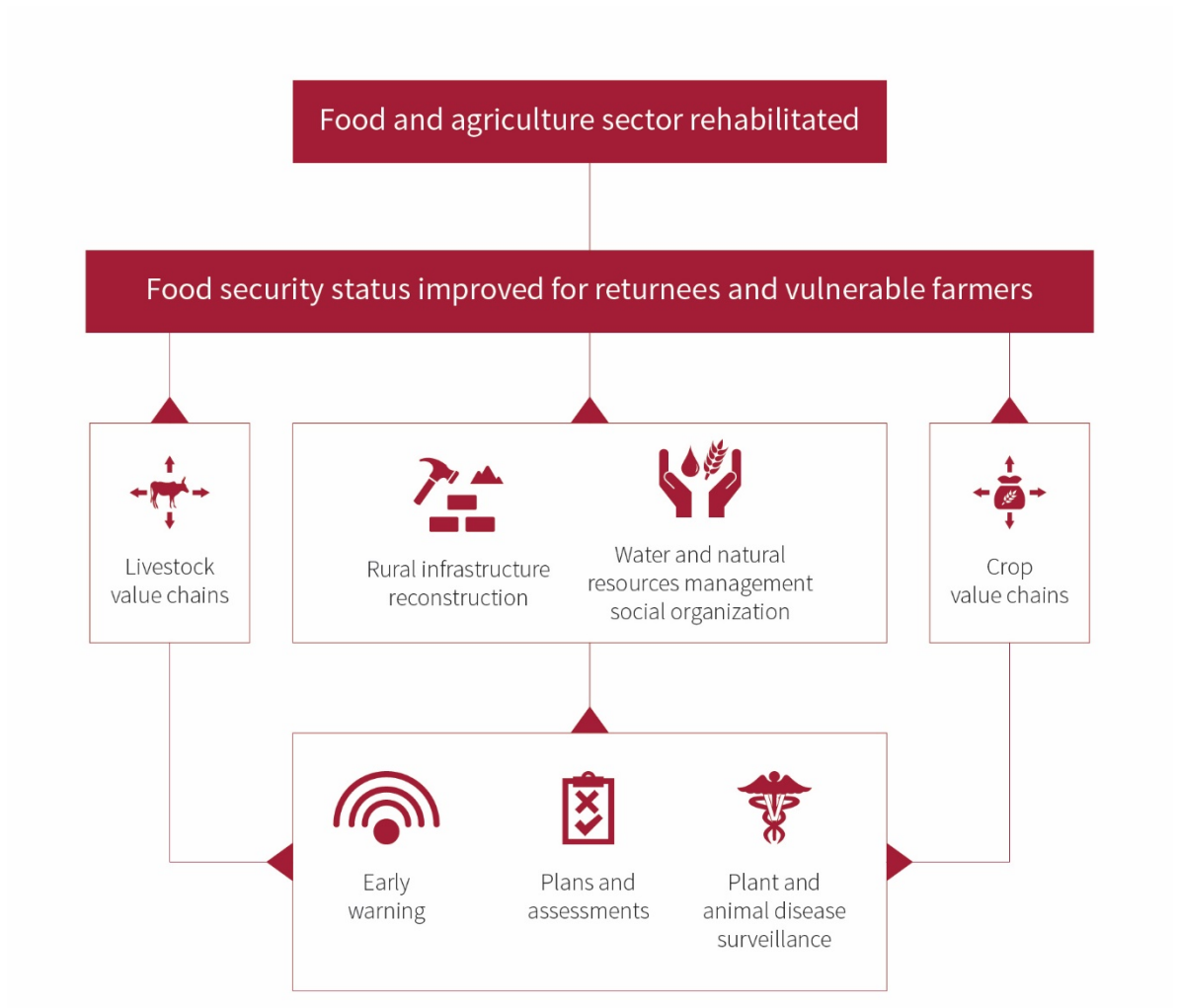


Figure 1. FAO's programmatic approach for former ISIL-held governorates.

Alignment and strategic fit

Outcomes and outputs of the Restoration of Agriculture and Irrigation Water Systems Sub-programme will contribute to the Government of Iraq's National Development Plan and Social Protection Strategic Roadmap (2015–2019), FAO's Country Programming Framework, the United Nations RRP and the global Sustainable Development Goals (SDGs), as well as build synergies with ongoing agricultural recovery and social protection programmes of United Nations agencies such as FAO, IOM, the United Nations Refugee Agency, the United Nations Children Fund and the World Food Programme (WFP) and international financing institutions such as the European Union, the International Fund for Agricultural Development and the World Bank.

National Development Plan (2018–2022)

The Government of Iraq and its humanitarian partners have been working consistently to provide emergency support to IDPs while returnees and remainees can expect to receive recovery assistance as well. As emergency needs are being addressed, questions about rehabilitation of the agriculture sector need to be answered by policy makers. The Government has been aware of the need to reform agriculture for years. Iraq's National Development Plan 2018–2022, recognizes a number of challenges posing threats to agricultural development in Iraq and its projected future progress. Among these lies the decrease in local agricultural production, limited capital investment in agriculture, heavy reliance on imports, environmental degradation and climate change, irrigation wastewater and outdated laws and legislations. Therefore, the National Development Plan aims to lift growth in areas such as food processing and service sectors. Achieving high yields for cereals – especially wheat – as well as for fruits and vegetables was estimated to have the largest effects on economic growth and household income. Other recommendations to improve competitiveness of the agriculture sector before the conflict included agricultural diversification, improvements in production and post-harvest technologies, extension services and rural infrastructure and reforms that would address land tenure issues and bolster value chains. The National Development Plan recognizes that Iraq has a comparative advantage for some agricultural products, particularly ones that require fertile irrigated land, such as orchard fruits, vegetables, cotton, sorghum and livestock. However, for decades subsidized grain production has been emphasised in both rainfed and irrigated areas despite the fact that it is more efficient to focus on grain production in rainfed areas.

Social Protection Strategic Roadmap (2015–2019)

The Government of Iraq has embarked on a comprehensive social protection reform that introduced significant improvements to the existing system, promoting equity, resilience and opportunities for the Iraqi people. Through the World Bank Iraq

Emergency Social Protection Support Programme, it has developed and progressed the implementation of the Social Protection Strategic Roadmap (2015–2019), with the vision of having “a comprehensive social protection system for Iraq covering social safety nets (that include unconditional cash transfers and CFW in the agriculture sector), social insurance and labour market policies”. Two major achievements have been: (i) a shift from categorical to poverty targeting in social assistance, which improved outreach to the poor; and (ii) the issuance of the new integrated Social Insurance Law that is likely to have a positive impact on labour mobility and fiscal rationalization of the pensions fund. This document serves as a base for the recently launched World Bank-funded Emergency Social Stabilization and Resilience Project (2018–2021; USD 200 million).

FAO Country Programming Framework (2018–2022)

In line with the National Development Plan and in close collaboration with the Government of Iraq, FAO has developed its new Country Programming Framework. The Country Programming Framework sets out three government priority areas to guide the FAO partnership and support with the Government – bringing together innovative international best practices and global standards with national and regional expertise during the five years from 2018 to 2022:

- **Resilience and restoration of agricultural livelihoods in retaken areas of Iraq.** FAO’s contribution in line with Government priorities focuses on the sustainable reconstruction and rehabilitation of the agriculture sector in the conflict-affected areas of five Iraqi governorates – including investment planning; repair and rehabilitation of rural infrastructure; revitalization of smallholder agricultural production; restoration and upgrading of agricultural research and extension services and plant protection and veterinary services in order to promote inter alia CSA and effective surveillance and control of transboundary plant and animal pests and diseases in border areas.
- **Restoration of degraded agricultural land and higher productivity of water resources in agriculture.** This priority area includes support for the strengthening of stakeholder capacities for increasing water productivity in irrigated agriculture and promoting sustainable land management practices in degraded areas.
- **Increased, sustainable smallholder agricultural productivity for higher food security and nutrition.** This includes support for rural populations in Iraq depend heavily on small-scale agriculture, upgrading of agricultural support services to promote CSA, improved capacity for the nationwide control of transboundary plant and animal diseases, inclusive value chain development of key agricultural commodities, and effective smallholder agricultural extension strategy and poor linkages with research and education institutions.

United Nations' Recovery and Resilience Programme (2018–2020)

The Country Programming Framework – particularly Priority Area 1 – presents a strategic opportunity for FAO to lead comprehensive resilience building programming that addresses the humanitarian-development nexus in the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din. The Kuwait Conference (12–14 February, 2018) showed the increased interest among the international community to support the reconstruction of Iraq and revealed high recognition of the role of the agriculture sector in the reconstruction process. FAO is therefore leading the United Nations' work on the Restoration of Agriculture and Water Systems Component (i.e. Component 3 of the United Nations RRP. The RRP is a two-year programme that aims at fast-tracking the reconstruction of society, building on efforts that are designed to help people see tangible and immediate improvements in their daily lives. The Programme includes six components that are national in scope and three components that target areas formerly controlled by ISIL. These high priority areas/sub-programmes aim at: i) Preventing violent extremism; ii) Revitalizing communities; and iii) Restoring agriculture and water systems. FAO's planned contribution under the Restoration of Agriculture and Irrigation Water Systems Sub-programme will focus on sustainable reconstruction and rehabilitation of the agriculture sector in the conflict-affected areas of the five retaken governorates, with an estimated budget of USD 92.95 million (i.e. USD 55 million for the first year and USD 37.95 million for the second year) for irrigation rehabilitation, crop and livestock production and marketing and food security and natural resources' information management-related projects (Chapter 4).

Global Sustainable Development Goals (2016–2030)

The sub-programme will contribute predominantly to SDG 2, "End hunger, achieve food security and improved nutrition and promote sustainable agriculture"; while supporting: SDG 1, "End poverty in all its forms everywhere; SDG 5, "Achieve gender equality and empower all women and girls; SDG 6, "Ensure availability and sustainable management of water and sanitation for all"; SDG 12, "Ensure sustainable consumption and production patterns; and SDG 15, "Protect, restore and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss".

Sub-programme framework

Goal

The Restoration of Agriculture and Irrigation Water Systems Sub-programme will make a significant contribution to the United Nation's two-year RRP aimed at fast-tracking the social dimension of reconstruction and rehabilitation in the retaken areas of central Iraq. FAO's interventions will focus on **improving the agriculture sector and access to meet basic needs in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates** through the restoration of smallholder farming systems, increased rural and peri-urban economic growth and diversification and enhanced employment generation opportunities. Sub-programme interventions will build on existing efforts and are designed to help ensure that people see tangible improvements in their daily lives at the start of the reconstruction process, rather than waiting years to benefit from large-scale infrastructure projects and structural reforms – in line with the Government of Iraq's commitment to multi-dimensional reconstruction.

Objective

The “ Restoration of Agriculture and Irrigation Water Systems Sub-programme” will support the Iraq RRP's component for “restoring agriculture and water systems” which aims at **improving food security and nutrition and reducing poverty for rural and peri-urban populations of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates affected by the conflict**, including both returnees and remainees. In this context, FAO will support relevant ministries of the Government of Iraq (i.e. Agriculture, Water Resources and Health and Environment) in providing assistance to the repair, rehabilitation, replacement and/or strengthening of agricultural infrastructure, equipment, value chains and support services in rural and peri-urban areas for climate-smart and conflict-sensitive smallholder crop and livestock

Target beneficiaries

The Restoration of Agriculture and Irrigation Water Systems Sub-programme is focused on five groups of target beneficiaries:

- **Vulnerable smallholder farming families (i.e. crop producers and livestock keepers)** – both returning IDPs from and remainees of the conflict – from rural and peri-urban “poverty pockets” of the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din will benefit from social safety interventions (that are aligned to existing platforms), e.g. cash transfers and CFW, appropriate agricultural input packages and training to reduce their household food insecurity and malnutrition and increase their income generating opportunities.
- **Small-scale farming families producing cereal and legume seeds, vegetables, milk and animal fodder** in the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa

and Salah al-Din will benefit from appropriate agricultural equipment and input packages, training and value chain development initiatives to increase income generation and employment creation opportunities while improving the food security and nutrition status of their respective communities and surrounding peri-urban and urban populations.

- Decision makers, directors, managers, subject matter specialists, veterinarians, extension workers, technicians, social workers and data analysts of government and non-governmental agricultural service providers supporting the agriculture sector of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates will benefit from regular situation updates and baseline information and capacity development (e.g. in-service training, rehabilitation of facilities, replacement of equipment and provision of field kits) in order to improve the efficiency and effectiveness of decentralised seed supply systems, agricultural and livestock extension services, plant protection services, animal health services, as well as inter-ministerial/sectoral coordination and climate-smart and conflict-sensitive agricultural recovery and resilience programming and strategy development.
- **Value chain actors** of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates (i.e. individual producers and producer groups, input suppliers, traders/buyers, agrifood processors, wholesalers, retailers, etc) will benefit from the upgrading of value chain strategies such as increased quantities and improved quality of agricultural produce, improved market awareness, information sharing capabilities and connectivity, and increased income generation and employment creation opportunities along supply and market chains. Collaboration between value chain actors will assist in the horizontal integration and will develop agricultural communities towards better access to markets and enhancement of collective production systems.
- **Community-based facilitators and workers** (e.g. farmer field school (FFS) and farmer business school (FBS) facilitators and community-animal health workers (CAHWs) – drawn from government extension and social workers, NGO social mobilizers, community leaders, unemployed graduates, private sector (e.g. shopkeepers), cooperative society managers and “champion farmers” from completed FFS programmes – will benefit from field kits and training in improved (climate-smart) crop and animal production practices, small agribusiness development, group-based adaptive research and participatory learning methodologies, field scouting and reporting of plant pests and diseases and surveillance and/or reporting of animal diseases, with emphasis on transboundary animal diseases (TADs) and zoonotic diseases.

It is estimated that the sub-programme will benefit 167 400 vulnerable smallholder and small-scale farming families and unemployed labourers and 1 124 government and non-governmental decision-makers, service providers and facilitators/workers (Table 1).

While equal opportunities will be given to women in affected rural and peri-urban areas to participate in and benefit from all sub-programme interventions, they will be

specifically targeted for homestead-based vegetable, poultry and dairy production and processing ventures. Similarly, the affected rural and peri-urban youth (especially unemployed agricultural graduates) will be encouraged to benefit from training in and gain employment as agrifood processors, FFS and FBS facilitators, CAHWs, market information system operators and food security and nutrition data collectors and analysts.

Approach/Methodology

FAO has developed a common vision and a holistic approach to the recovery of agriculture sectors and transition to sustainable food systems¹¹. This unified perspective – valid across crops, livestock, forestry, and fisheries sub-sectors – and taking into account social, economic and environmental considerations – ensures the effectiveness of action on the ground and is underpinned by knowledge based on the best available science, and adaptation at community and country levels to ensure local relevance and applicability. FAO's five principles of sustainable food and agriculture are: (i) improving efficiency in the use of resources; (ii) direct action to conserve, protect and enhance natural resources; (iii) protect and improve rural livelihoods, equity and social well-being; (iv) enhanced resilience of people, communities and ecosystems; and (v) responsible and effective governance mechanisms.

In this context, the sub-programme uses an integrated approach that it will support smallholder farming families to diversify incomes, increase resilience and provide nutritious and healthy diets through a comprehensive set of packages, including cash, short-term employment through CFW, agricultural inputs, training and strengthening of market linkages – under a scenario of climate change and variability and conflict sensitivity. These will not only respond to their immediate needs for food and essential non-food items but should restore agricultural livelihoods that generate income and employment in the longer term. It will work closely with other stakeholders to ensure that broad needs and social-wellbeing of households and communities are being served. At the same time, the sub-programme restores vital government infrastructure and support services to the agriculture sector that have been destroyed, damaged or looted. Using this integrated programming approach also allows for proper monitoring and evaluation where impact of the sub-programme interventions can be measured.

It is envisaged that sub-programme interventions will therefore be more effective and their sustainability assured when the following strategies and methodologies be followed by FAO and its partners:

- Rapid/participatory rural appraisal techniques for implementation of socio-economic and biophysical baseline surveys (built on existing registries, datasets,

¹¹ www.fao.org/sustainability/en

etc), strengthening of village committees, selection of sub-programme beneficiaries, preparation of farm and small agribusiness plans and monitoring and evaluation of sub-programme activities.

- In line with FAO's Corporate Framework to Support Sustainable Peace, sub-programme interventions will be informed by area-context assessments that inform conflict-sensitive design and implementation and enhance social cohesion and "do no harm" by not inadvertently contributing to the fuelling of community tensions, reigniting conflict and seeking pathways to solidify local peace.
- Group-based and market-led applied research and participatory extension approaches for crop and livestock production, processing and marketing, e.g. implementation of FFSs, FBS and CAHW networks. This will lead to the formation of informal producer marketing groups (PMGs) for homestead-based farmers and establishment of more formal producer marketing organizations for small-scale farmers to facilitate collective supply of agricultural inputs and marketing of surplus agricultural production (i.e. cereals, legumes, vegetables and animal fodder and eggs, meat, wool, dairy products, honey, etc).
- Devolved management of agricultural support services, e.g. governance of restored irrigation water supplies (e.g. water users' associations (WUAs)), public-private seed supply systems, participatory extension methodologies (i.e FFSs and FBSs) and CAHW networks.
- Cash+ interventions: i.e. combinations of unconditional cash transfers, agricultural input packages (purchased through vouchers or distributed in-kind), training in improved crop and animal production practices) and CFW for livelihood recovery – building on existing (effective) social protection platforms, input distribution systems and capacity development approaches.
- Integrated agro-ecological systems for the conservation and management of natural resources, enhancement of biodiversity and increased use of local genetic resources, e.g. local governance of water resources promotion of agroforestry practices for fruit, fodder, timber and fuel production and local productive seed varieties and animal breeds, and optimal use of agricultural chemicals and animal medicines and vaccines.
- Improved household food nutrition, including nutritious foodstuffs, diversified diets, food preparation, food storage and hygiene – using FFSs to establish a nexus between fruit, vegetable, egg, milk and meat production and processing, women's empowerment and family nutrition and health.
- Value chain development approaches to establish/strengthen linkages between smallholder producers and inputs suppliers, service providers and market outlets through improved awareness, information sharing and overall connectivity that will ensure smooth growth of household-based micro and group-based small agribusinesses. The development of new and strengthening of existing public-private-community partnerships (PPCPs) along concerned value chains is an exit strategy for all sub-programme interventions related to crop and livestock production and agrifood processing. Creation of local multi-sided (stakeholders')

platforms will facilitate collaboration between value chain actors and will assist in eliminating challenges and obstacles to market linkage communication.

- The sub-programme will be especially sensitive to gender dynamics, in particular the inclusion of women and female-headed households among (vulnerable) smallholder farming families to produce and process quality and nutritious foods for both home consumption and sales, to benefit from appropriate CFW activities, to participate in income generating and marketing ventures and to engage in all capacity development interventions. Sub-programme interventions will further engage communities by strengthening concerned, associations, groups and committees to ensure the participation of both women and men (and youth) at all stages of project cycles and facilitate their inclusiveness and accountability. In this context sub-programme interventions will be guided by FAO's FAO Gender Equality Policy (2012) and supported by FAO's Regional Gender Strategy and Action Plan for the Near East and North Africa (2016-2020).

Components and key intervention areas

The "Restoration of Agriculture and Irrigation Water Systems Sub-programme" comprises three components and 15 key intervention areas (KIAs) – in line with FAO/RNE's three Regional Initiatives (Chapter 5). While the KIAs are sectoral in nature (i.e. irrigation infrastructure and water management, crops and livestock production and marketing and agrifood-system programming), the sub-programme will promote agro-ecological and conflict-sensitive approaches that integrate climate-smart and gender equitable agricultural production, value chain development, natural resources management, food nutrition and social protection interventions to enhance the social and economic welfare of smallholder farming families and to protect the environment. In this context, FAO's resource partners will be encouraged to fund interventions of the sub-programme or an individual component as a whole on a geographical basis (e.g. governorate or district) in order to ensure full integration and a greater chance of sustainability.

A logical framework matrix for the sub-programme is provided in Annex I and the 15 KIAs are summarised in Table 1 and detailed in Annex II.

Component 1: Restoring irrigated water supplies across conflict-affected areas

Improving water-sharing arrangements

- The quantity and quality of water available to people living in retaken areas of central Iraq assessed.
- The Government's "Strategy for Water and Land Resources in Iraq" reviewed and updated to match assessed availability of water resources, measured against needs for human, animal and irrigated farming use (with a focus on retaken areas of central Iraq), including action plans for more efficient use of irrigated water.

- Lower Mesopotamia cooperation and coordination mechanisms on water resources management re-established and further developed.

Restoring irrigated farming systems

- Damage and loss assessments and surveys conducted across all irrigation systems of retaken areas; engineering designs and cost estimates prepared; feasibility studies undertaken; irrigation schemes prioritized for fast-tracking of repair, rehabilitation and reconstruction works; and beneficiaries of CFW interventions selected through existing social registries.
- Damaged irrigation infrastructure (e.g. dams, canals, diversion gates and bridges) repaired, rehabilitated and reconstructed – through MoWR-approved contractors for major works and community-based CFW interventions for unskilled works; and looted or damaged irrigation equipment (e.g. pumps, generators, tanks and sprinkler/drip systems) replaced through enabled supply chains.
- WUAs re-established and/or strengthened for improved equitable water distribution and irrigation system maintenance, repairs and efficient water delivery; and FFS programmes implemented to test, validate and replicate efficient on-farm water management and water-harvesting technologies and practices.

Component 2: Restoring and diversifying smallholder farming systems as a transition to sustainable agriculture

Rehabilitating cereal and legume seed supply systems

- The capacity of the MoA's General strengthened through Directorate of Agricultural Research the: (i) rehabilitation of seed production farms at its research stations in the five retaken governorates through the provision of field machinery, laboratory equipment and mobile seed processing equipment (including CFW for unskilled labour requirements (selected through existing social registries)); (ii) training of technical staff in modern plant breeding and varietal maintenance techniques; and (iii) selection of wheat, barley, lentil and chickpea varieties to be maintained in order to produce breeder seeds.
- The capacity of the Government of Iraq's State Board for Seed Testing and Certification (SBSTC) strengthened through the: (i) provision of seed laboratory equipment for its branches in Anbar, Ninewa and Salah al-Din and Anbar governorates; (ii) training of SBSTC and seed companies' staff in seed quality control aspects covering modern field, laboratory and seed processing methods; (iii) review, regulation and seed standard setting at the field and laboratory levels required for developing effective decentralised seed supply systems; and (iv) improved field inspection and certification of smallholder seed producers.
- Quality seeds (i.e. foundation and registered) provided to seed-growing farmers for further multiplication using innovative cropping and processing practices; and the capacities of those farmers developed through the FFS approach to

participatory knowledge and skills transfer and the provision of appropriate farm tools and modern seed processing and packaging equipment and materials (in particular, access to mobile seed cleaners).

- PPCPs developed and connectivity strengthened along value chains for the efficient and effective: (i) supply of inputs by private companies; (ii) production and processing of cereal and legume seeds by private seed companies and farmers; (iii) seed certification by SBSTC; and (iv) marketing of certified seeds to smallholder farmers in the five retaken governorates – including improved and transparent awareness raising, market information sharing, contracting and purchasing arrangements, etc.

Rehabilitating animal fodder supply systems

- The MoA's Directorate of Animal Production supported for the testing of alternative drought-tolerant fodder plants (e.g. old man's saltbush, cacti and clovers) on Ministry agricultural research stations and farmers' fields (through FFSs).
- Value chain analyses conducted for animal fodder produced in the retaken areas and crops/varieties prioritized for fast-tracking fodder production and conservation interventions; baseline surveys, feasibility studies and farm planning undertaken for small-scale producers growing such crops and most affected by the conflict; and beneficiaries selected for sub-programme support.
- Input supply chains enabled for the provision of animal fodder seeds and planting materials, irrigation equipment and conservation tools and materials to selected beneficiaries, including support to private fodder seed farms.
- The capacities of small-scale animal fodder producers (i.e. men, women and youth) strengthened through: (i) support to land preparation and (agroforestry) tree planting activities through CFW interventions; (ii) the provision of quality fodder seeds and planting materials, small-scale irrigation equipment and conservation tools and materials through voucher and/or in-kind distribution mechanisms; (iii) participation in FFSs to learn improved fodder production practices and conservation technologies; (iv) follow-up monitoring and training.
- PPCPs developed and connectivity of concerned value chains strengthened for the baling, transportation and marketing of animal fodder to the benefit of smallholder livestock keepers.

Increasing livelihood assets of vulnerable vegetable growers, livestock keepers and agrifood processors

- Building on existing social registries and agricultural datasets, baseline surveys and needs assessments conducted for small family farms most affected by the conflict; beneficiaries selected for sub-programme support (particularly women, female-headed households and young farmers); and smallholder horticultural, poultry and dairy production, agrifood processing and small ruminant restocking packages designed to make a significant impact on the restoration of smallholder vegetable, egg, honey, milk, cheese, yoghurt, wool and meat production.
- Value chain analyses conducted for agricultural commodities produced in the retaken areas and vegetable crops and animal breeds prioritized for fast-tracking horticultural and livestock production and value chain development interventions; baseline surveys, feasibility studies and farm planning undertaken for smallholder farmers selected.
- Input supply chains enabled for the provision of horticultural packages (i.e. greenhouses, drip irrigation equipment, vegetable seeds/seedlings, fodder/fruit tree seedlings and/or hand tools), poultry packages (i.e. healthy chickens and poultry equipment and feed), small ruminant restocking packages (i.e. healthy sheep and goats and animal fodder), honey production packages (i.e. healthy bees and hives), milk production and dairy processing packages (i.e. milking machines and milk collection, cooling, storage and processing equipment and materials) and agrifood processing packages (i.e. post-harvest handling and processing equipment, utensils, containers and materials) to selected beneficiary households. This will also include technical support to private nurseries and animal breeders for the provision of vegetable seedlings, chickens, sheep and goats and to input suppliers in their role for providing advisory services (leading to less stress on governmental extension services).
- Community-based cash+ schemes designed and implemented to maximize the social protection of beneficiaries and the sustainability of interventions, i.e. a combination of unconditional cash transfers, vouchers to purchase elements of the abovementioned packages, training in improved/climate-smart vegetable, agroforestry, poultry, animal restocking, milk production and dairy processing and agrifood processing technologies and practices) and/or CFW interventions (for land preparation, tree planting, etc) ,as well as follow-up monitoring and training.
- The capacities of governorate-level (government and non-governmental) agricultural extension and social services strengthened to effectively support smallholder women and men farmers with improved access to safety nets and increased vegetable, poultry, small ruminant, dairy production and agrifood processing, including the design, implementation and monitoring of FFS programmes for the promotion of CSA technologies and practices within the horticultural and animal production sub-sectors.
- Implementation and monitoring of: (i) FFSs, whereby groups of beneficiary men and women farmers learn improved CSA technologies and practices for vegetable,

agroforestry, poultry, small ruminant and honey production; and (ii) FBSs, whereby groups of more entrepreneurial agrifood processors learn improved cleaning, grading, processing, packaging, storage and transportation technologies, quality control and food safety requirements and small agribusiness practices (including marketing).

- The collective marketing and commercialization capacities of smallholder producers strengthened through: (i) the establishment of informal PMGs; (ii) establishment of milk, honey and wool-collection centres that comply with food safety/quality control standards; and (iii) development of PPCPs to strengthening connectivity of value chains to ensure full integration of PMGs with concerned input suppliers, service providers and buyers/market outlets (e.g. improved market information systems).

Component 3: Strengthening information and early warning systems on food security and nutrition and transboundary threats

Supporting evidence-based agrifood systems planning, programming and monitoring and evaluation

- A FAO-specific conflict sensitivity analysis undertaken – with linkages with the United Nations’ common system Conflict and Development Analysis. The analysis will be informed by the core sub-programmatic components and the prevailing national context (i.e. macro-level analysis) with a focus on more specific considerations within the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din (i.e. meso-level analysis) and the most affected/target areas (i.e. programme-level analysis).
- Socio-economic and biophysical surveys undertaken with partners to continuously assess and monitor the overall food security, nutrition, natural resources and local economic situation in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates and to identify pockets of food insecurity, malnutrition, irrigation water shortages, land degradation, as well as migration, job creation, child labour and social cohesion, that will feed into evidence-based resilience programming and agricultural investment planning (that respond to the needs of the sub-programme’s interventions) as well as SDG monitoring systems.
- The capacity of relevant government and non-governmental institutions strengthened to efficiently and effectively collect, analyse, store and disseminate food security, nutrition, natural resources and conflict sensitivity data/information across the country (with emphasis on the five retaken governorates) under the umbrella of the national Food Security and Nutrition Information System (FSNIS). This improved information management capacity should improve opportunities to develop and monitor governorate-level food security policies and strategies that will guide resilience programming and agricultural investment planning in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates.

Restoring plant protection services

- Damage and loss assessments and surveys conducted for government and private sector plant protection services of retaken areas; and a rapid-response recovery plan prepared for the decentralised surveillance and control of plant diseases and pests.
- Monitoring and early warning systems and quarantine measures for transboundary plant pests and diseases restored through the rehabilitation/upgrading of diagnostic laboratories (including CFW for unskilled labour requirements); the provision of essential traps, tools, instruments and materials needed for their detection and identification; and the training of field scouts, laboratory technicians, data analysts, plant protection inspectors, quarantine officers, etc to improve survey, inspection, control and decision-making practices (through the training of trainers).

- FFS programmes implemented and monitored in areas with high risks of plant diseases and pests to promote integrated pest management (IPM) technologies and practices – with communication linkages to the aforementioned surveillance and early warning systems.
- Contingency plans for controlling transboundary pests and diseases developed and “rapid response” packages provided for the safe use of required biopesticides and insecticides in an integrated manner.

Restoring animal health services

- Rapid institutional assessment of animal health systems and veterinary facilities across all five retaken governorates conducted – with defined roles and responsibilities of private and public veterinary services based on a socio-economic analysis for direct and indirect costs for optimising efficiency and impacts – with recommendations for capacity development in the context of monitoring and controlling TADs.
- TAD monitoring and control measures restored through: (i) the training of veterinarians in animal disease surveillance and reporting, import risk assessment, veterinary quarantine regulation, procedures and practices, and early warning and reporting for timely communication of TAD risks and preparedness for and rapid containment of disease outbreaks; (ii) the rehabilitation/up-grading of diagnostic laboratories (including CFW for unskilled labour requirements); (iii) the provision of essential equipment, instruments and materials required to improve veterinary quarantine, field veterinary clinics and cold chains (including veterinary kits, drugs and medicines); (iv) the training and equipping of extension workers and CAHWs; and (v) the establishment of CAHW networks in high-risk areas.
- Proper and timely communication programmes of risks and outbreaks for rapid containment and TAD control developed, including public awareness raising campaigns at the community level and further support to CAHW networks.
- Sheep, goats, cattle and buffaloes vaccinated against prevailing serotypes of foot and mouth disease, peste des petits ruminants and other priority TADs through properly planned and conducted vaccination campaigns across high-risk areas of all five retaken governorates.
- Epidemio-surveillance, reporting by communities (through CAHW networks), diagnosis and post-vaccination monitoring of foot and mouth disease and peste des petits ruminants for a progressive control pathway contributing to reduced TAD risk for the target governorates.
- TAD information database established at national and governorate levels and communicated to all stakeholders; effective TAD surveillance and control strategies and preparedness plans developed for all five retaken governorates; and cross-border coordination mechanisms on TADs surveillance and control established particularly with neighbouring Iran, Jordan, Saudi Arabia and the Syrian Arab Republic.

Cost estimate

The total cost of the two-year Restoration of Agriculture and Irrigation Water Systems Sub-programme is estimated at USD 90 million (Table 1).

Table 1. RRP sub-programme components and project concepts

Component/Key intervention area	Beneficiaries (type and number)	Cost (USD)
1. Restoring irrigated water supplies across conflict-affected areas	127 530	22 500 000
1.1. Support to improved water-sharing arrangements in central Iraq	30 government decision-makers and technicians	500 000
1.2. Support to the rehabilitation of water control and irrigation systems in central Iraq	75 000 irrigated farmers 1 500 labourers (CFW)	17 000 000
1.3. Support to improved irrigation water efficiency and management in central Iraq	50 000 irrigated farmers 1 000 labourers (CFW)	5 000 000
2. Restoring and diversifying smallholder farming systems as a transition to sustainable agriculture	40 297	51 830 000
2.1. Support to the improved availability of quality cereal and legume seeds for vulnerable family farming returnees and remainees	1 000 labourers (CFW) 80 government staff 550 seed growers	6 030 000
2.2. Support to improved small-scale animal fodder production, conservation and marketing	50 government staff 2 500 fodder growers 3 000 labourers (CFW)	7 000 000
2.3. Support to vulnerable family farming returnees and remainees through the rehabilitation and strengthening of vegetable production and marketing	80 extensionists 20 300 vulnerable smallholder farming families 1 000 labourers (CFW)	10 000 000
2.4. Support to vulnerable family farming returnees and remainees through increased homestead-based poultry production	32 extensionists 2 500 vulnerable smallholder farming families 25 CAHWs	1 800 000
2.5. Support to vulnerable family farming returnees and remainees through the	100 veterinarians, extensionists and CAHWs	13 000 000

restocking of small ruminants and safeguarding animal survival, health and production	4 050 vulnerable smallholder farming families	
2.6. Support to vulnerable family farming returnees and remainees through improved homestead-based agrifood processing and microenterprise development	30 government extensionists and NGO social mobilizers 2 000 vulnerable smallholder farming families	6 000 000
2.7. Support to vulnerable family farming returnees and remainees through improved small-scale dairy processing and marketing	3 000 small-scale dairy farmers	8 000 000
3. Strengthening information and early warning systems on food security and nutrition and transboundary threats	697	15 650 000
3.1. Support to conflict-sensitivity analysis and monitoring at national, governorate and programme levels	50 government and non-governmental planning and programming staff	300 000
3.2. Support to an improved understanding of food security and nutrition, including improved stakeholder capacities to conduct and analyse socio-economic and biophysical assessments	50 government and non-government decision-makers, data collectors and analysts, and GIS technicians	900 000
3.3. Support to a well-coordinated and networked food security, nutrition and natural resources information system to assess and monitor the situation in the retaken governorates	50 government decision-makers and information management specialists and Sector/Cluster Secretariat members/partners	450 000
3.4. Support to the recovery and upgrading of Iraqi border surveillance and control of transboundary plant diseases and pests	85 government staff 100 community field scouts (intergrated pest management)	7 000 000
3.5. Support to the recovery and upgrading of TAD surveillance and control systems in border areas of Iraq	12 government decision-makers 250 government and private veterinarians 100 CAHWs	7 000 000
Total		89 980 000

FAO's comparative advantage

The comparative advantages of FAO are derived from its mandate as a lead international agency for food security and agricultural development. FAO has therefore been a key actor in the whole process leading to the formulation of the 2030 Agenda for SDGs. In this context, FAO's five Strategic Objectives are aligned to contribute to the SDG Agenda:

1. Contribute to the eradication of hunger, food insecurity and malnutrition.
2. Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner.
3. Reduce rural poverty.
4. Enable more inclusive and efficient agricultural and food systems.
5. Increase the resilience of livelihoods to threats and crises.

Moreover, FAO plays a crucial role in monitoring SDGs and is the custodian of 21 SDG indicators across six SDGs (i.e. 2, 5, 6, 12, 14 and 15) – four of which are important to the sub-programme (Chapter 3) – and a contributing agency to four more.

FAO as a specialized United Nations agency can act as a neutral broker for the Government and its development partners in difficult and complex issues related especially to policies, institutions and legal and regulatory reforms. This makes the Organization an ideal partner for implementing food security, nutrition, social protection and resilient agricultural livelihoods interventions that benefit refugees, IDPs, returnees and remainee populations of rural and peri-urban communities.

FAO has expert technical knowledge and experience of agriculture, food security and nutrition, especially in international standards and best practices for livelihood recovery and resilience, agricultural and rural development and agricultural climate change adaptation. FAO's technical expertise and administrative support capacity are located at its headquarters in Rome, Italy and throughout its decentralized network of regional and country offices, all of which maintain strong links to the governments of member nations. Within the Near East and North Africa Region, FAO supports 19 Member States to achieve sustainable food security for all and help vulnerable communities and households to cope with and recover from shocks and crises by addressing three vital challenges: (a) water scarcity; (b) fragile resilience; and (c) the intertwined constraints that are impeding the productivity, profitability and contribution of small-scale family farming to economic growth. FAO delivers its work on these strategic priorities through three Regional Initiatives: (i) water scarcity; (ii) building resilience for food security and nutrition; and (iii) small-scale family farming. Delivery managers at FAO's RNE, technically supported by networks of specialists based in FAO headquarters and offices within the region, coordinate the Regional Initiatives.

Inside Iraq, FAO is a key player pushing for interventions that bridge the continuum between humanitarian support and development interventions in the food and

agriculture sector, covering rural and peri-urban areas. Assisting in preventing disaster-related emergencies, providing early warning for food emergencies and helping in rehabilitation of food production systems are among FAO's predominant roles. The main forms of FAO's interventions include, but are not limited to, needs assessments, the provision of essential agricultural inputs and technical assistance in planning and management for sustainable recovery and resilience in rural production systems. Past experience with promoting climate-smart agriculture are an asset. FAO's well-known FFS approach can be adapted to Iraq for the crop, livestock and water management sub-sectors and capacity development of beneficiary groups (i.e. women, men and youth). Over the last decade, FAO has accumulated solid experience in cash transfer programming across a wide range of settings (e.g. humanitarian, social protection and development), including in Iraq.

FAO also has an excellent working relationship with the MoA and MoWR and prospective service providers (e.g. national and international NGOs) through its letter of agreement (LoA) partnership framework. FAO is furthermore co-chair of the Food Security and Agriculture Cluster, which allows it to help set direction for the whole sector. It is furthermore well placed to provide effective technical assistance and to support the community stabilization and agriculture sector restoration objectives of the RRP. It is worth noting that FAO has a large regional and global pool of technical specialists from which to draw to ensure high quality implementation of this sub-programme and its four components and 14 project concepts. FAO's strong reputation in management and financial and administration oversight provides another asset.

FAO is using participatory approaches across all of its current interventions that ensure sustainability through close collaboration with its partners and beneficiaries by engaging male and female farmers in activities with substantial social and economic benefits. This includes the establishment of more formal specialized producer associations and more informal producer groups assisting with improved water management and improved practices for production, processing and marketing of agricultural produce to name a few. Value chain approaches further ensure the involvement and partnership of major stakeholders, including the private sector and other investors along concerned supply and market chains. FAO continuously assesses best practices from its past interventions and those of other agencies, in both Iraq and the region.

Implementation arrangements

Institutional framework

FAO will implement the projects covered under its RRP sub-programme in partnership with relevant government ministries and their national and governorate directorates and ongoing programmes (e.g. MoA and MoWR, as well as the Ministry of Health and Environment, the Ministry of Migration and Displacement, the Ministry of Labour and Social Affairs and the Ministry of Planning), concerned local authorities, United Nations agencies and non-governmental service providers (e.g. NGOs and private sector organizations/companies). In this context, the FAO Representative in Iraq oversees the funded projects and is responsible for general administration and financial supervision of funds provided by the concerned resource partners. Project planning will be conducted in close collaboration with the Iraqi authorities in order to facilitate clearances for the movement of FAO personnel and service providers to and from locations where interventions will be implemented.

FAO operates efficient programming, project management, operations and administration/finance units at its Representation located in Baghdad and Emergency Coordination Unit located in Erbil. FAO is currently expanding its national and international technical and operational staffing capacities in order to effectively plan, implement, monitor and coordinate its increasingly devolved activities. The FAO country office receives technical and operational support from its RNE and headquarters, where technical units and multi-disciplinary task forces will provide constant technical oversight during the formulation, resource mobilization, implementation and evaluation of projects. FAO lead technical officers have daily interactions with the offices in Baghdad and Erbil, and field teams at the governorate and site levels, and are able to provide technical support services through the deployment of field missions to Iraq and project sites when required.

FAO, in collaboration with MoA and the Ministry of Labour and Social Affairs, will directly oversee the identification and selection of the beneficiaries of the sub-programme's agricultural and social protection interventions – based on existing social registries, socio-economic baseline surveys and household needs assessments – using a participatory approach to ensure targeting, transparency and accountability.

The sub-programme will be implemented through the competitive selection of competent implementing partners, such as national and international NGOs, in addition to the key government ministries and directorates at national and governorate levels. These arrangements will be governed by the conditions stipulated in LoAs signed with FAO. Implementing partners will be selected *inter alia* based on their technical expertise, prior performances, operational capacity and field-level presence. International and national consultants/specialists with the requisite technical expertise and experience will be contracted to provide technical oversight for the various aspects of the sub-programme's projects.

Monitoring and reporting

Real time/day-to-day technical and financial monitoring of the implementation of different sub-programme projects and the progress of FAO and implementing partner responsibilities will be a continuous process. FAO has established a technical and financial monitoring and reporting system that helps track all outputs and activities being implemented under its ongoing humanitarian and recovery programme in the country and links them to FAO's Corporate Strategic Framework (and its five Strategic Objectives and three Regional Initiatives). On launching the sub-programme, monitoring and reporting will be expanded to accommodate its four components, nine sub-components, 14 projects and some specific indicators formulated to monitor and evaluate the gender-related and social stability-related results and impacts. At all levels, FAO will monitor the physical progress of component, sub-component and project activities undertaken by FAO and its government and non-governmental implementing partners. The FAO Representative in Iraq, in turn, will keep the relevant government line departments, resource partners, United Nations partners and concerned technical units of RNE and FAO headquarters continuously informed about activities and any delays or difficulties through the sub-programme's regular reporting mechanisms (e.g. monthly monitoring sheets and quarterly and annual progress reports), so that appropriate support or corrective measures can be adopted in a timely fashion.

A common monitoring, performance assessment and reporting format would be conducted in accordance with established procedures of FAO and the Government of Iraq, as well as participating resource partners. FAO will conduct socio-economic and baseline surveys during the inception phase of the sub-programme in order to facilitate the update of overall project targets, including the introduction of necessary amendments to project designs based on the prevailing conditions in the context of implementing project activities. Logical framework matrices for each of the 14 projects will then provide verifiable performance and impact indicators (disaggregated by sex, age and other socio-economic characteristics) for project implementation along with their corresponding means of verification. These will form the basis upon which the monitoring, performance assessment and reporting system will be built by FAO's monitoring and evaluation unit in Iraq. A key task will be to assess the progress and impact and prepare findings to be shared at the national level to help the Government of Iraq, UNCT and participating resource partners to demonstrate that commitments to resilience and the sustainable restoration of agricultural livelihoods are taken seriously.

To support financial monitoring and reporting obligations and the everyday implementation of the sub-programme's projects and the corresponding use of resources, two tools available in FAO's global Field Programme Management Information System (FPMIS) will be utilized: (i) automatic messages sent by "housekeeping" as reminders of delivery performance and reporting obligations and to "flag" certain conditions that may carry risks and/or require attention; and (ii)

“Field Programme Support Network Monitoring Active Projects” tool that allows the checking of projects and portfolios against a broad range of conditions related to progress and performance. Furthermore, budget holder reports, available in the “Business Intelligence Tool/Data Warehouse” and also available in FPMIS, will be used to provide information about delivery against detailed budget lines and project expenditure.

Communication and outreach

One of the aims of FAO’s sub-programme is to strengthen and support efforts in advocacy, awareness-raising, knowledge management and communication, as well as other initiatives that raise awareness on recovery and resilience interventions targeting agricultural livelihoods. In particular, the sub-programme’s communication and outreach activities will focus on the following areas:

- Increasing awareness, knowledge, understanding and visibility about the importance of resilience and agricultural livelihood restoration.
- Contributing to success stories from the field and highlighting projects related to FAO’s work on resilience and agricultural livelihood restoration in central Iraq.
- Interventions targeting agricultural livelihoods in the fight against hunger, malnutrition (with a focus on undernutrition and micronutrient deficiencies) and poverty (with a special emphasis on vulnerable women and youth).
- Advocate for greater commitment and financial investment in resilience and agricultural livelihood activities from government authorities at all levels and resource partners.
- Promote good practices, gender equality and women’s empowerment that can be scaled up.
- Contribute to FAO’s communication strategy towards ending hunger in FAO’s SDG 2 framework (Chapter 3).

Annex I – Logical framework matrix

Results chain	Indicator	Baseline	Target	Means of verification	Assumption
Impact					
Make a significant contribution to the United Nations' Iraq RRP through improvement of the agriculture sector	Percentage increase in agricultural gross domestic product (GDP) for Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates		5% increase	<ul style="list-style-type: none"> • United Nations' reports • Government of Iraq reports 	
Outcome					
Improved food security and nutrition and reduced poverty for rural and peri-urban populations of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates affected by the conflict	<ul style="list-style-type: none"> • Household assets • Agricultural assets • Food Consumption Score • Household Dietary Diversity Score • Food Security Coping Strategy Index (i.e. Reduced Coping Strategy Index) • Livelihood Coping Strategy Index 	To be conducted at the start of the sub-programme	To be conducted at the end of the RRP (after two years)	<ul style="list-style-type: none"> • FAO and WFP reports • MoA, MoWR, MoHE and Central Statistics Office reports 	No external factors (e.g. storms, floods, prolonged dry spells, droughts, pests, diseases and insecurity) affecting agriculture sector recovery and social stability

	<ul style="list-style-type: none"> Percentage increase in household revenue from agricultural activities 				
Outputs					
1. Irrigated water supplies across conflict-affected areas restored	<ul style="list-style-type: none"> Hectares of land restored to irrigated farming Number of farmers returning to irrigated cropping Number of community-based cash for work (CFW) schemes completed Number of Water Users' Associations (WUAs) established 	<ul style="list-style-type: none"> Irrigation systems not or partially functioning Damage/loss assessments and socio-economic baseline surveys 	<ul style="list-style-type: none"> 150 000 ha of irrigated land 75 000 irrigated farmers 2 500 unemployed labourers benefit from CFW 30 WUAs established 	<ul style="list-style-type: none"> MoWR, MoA and FAO records Sub-programme baseline and endline reports 	<ul style="list-style-type: none"> Favourable weather conditions across project areas Ready access to project sites assured Political will for participatory, devolved and value chain development approaches to agricultural restoration interventions
2. Smallholder farming systems restored and diversified as a transition to sustainable agriculture	<ul style="list-style-type: none"> Number of devolved seed supply chains developed Number of smallholder farmers restored to vegetable production 	<ul style="list-style-type: none"> Supply and market chains and support services not or partially functioning Damage/loss assessments and socio-economic baseline surveys 	<ul style="list-style-type: none"> 5 seed supply chains 10 animal fodder supply chains 20 300 smallholder vegetable producing families 11 550 livestock keeping families 	<ul style="list-style-type: none"> MoA records FAO records Sub-programme baseline and endline reports 	<ul style="list-style-type: none"> Farmers willing to invest time and labour in project activities Quality agricultural inputs

	<ul style="list-style-type: none"> • Number of community-based CFW schemes completed • Number of vulnerable livestock keepers' livelihoods recovered • Number of animal fodder supply chains developed • Number of community-based CFW schemes completed 		<ul style="list-style-type: none"> • 4 000 unemployed labourers benefit from CFW • Cash+ budget of USD 12 740 000 		readily available in Iraq
3. Information and early warning systems on food security, nutrition and transboundary threats strengthened	<ul style="list-style-type: none"> • Stakeholder capacity for socio-economic and biophysical assessments and conflict-sensitive analyses strengthened • National Food Security and Nutrition Information System (FSNIS) functioning 	<ul style="list-style-type: none"> • Food security, nutrition and natural resources information for the retaken governorates lacking and inconsistent • Stakeholder institutional assessments 	<ul style="list-style-type: none"> • Quality and timely food security, nutrition and natural resources reports and conflict-sensitive programme documents produced and disseminated • 5 governorate-level plant protection services • 5 governorate-level livestock protection services 	<ul style="list-style-type: none"> • MoA, MoHE and Central Statistics Office records • FAO records • Sub-programme baseline and endline reports 	<ul style="list-style-type: none"> • Full cooperation among sub-programme partners • Timely technical support services provided by FAO

	for the five retaken governorates <ul style="list-style-type: none"> • Plant protection services functioning • Transboundary animal disease (TAD) surveillance control systems functioning 				
Activity					
1.1. Improve water-sharing arrangements in retaken governorates	<ul style="list-style-type: none"> • Updated national Strategy for Water and Land Resources in Iraq (SWRLI) 	<ul style="list-style-type: none"> • SWRLI outdated for present context of central Iraq 	<ul style="list-style-type: none"> • Revised SWRLI for equitable water control systems • 4 cross-border water resources' coordination meetings organised and reported 	<ul style="list-style-type: none"> • Workshop proceedings • Strategy documents 	<ul style="list-style-type: none"> • Full cooperation of partner organizations
1.2. Support the rehabilitation of water control and irrigation systems	<ul style="list-style-type: none"> • Number of irrigation structures functioning • Number of hectares brought back under irrigation • Number of beneficiary farmers irrigating land • Number of community-based 	<ul style="list-style-type: none"> • Damage and loss assessments 	<ul style="list-style-type: none"> • 100 irrigation structures rehabilitated • 150 000 ha of land irrigated • 75 000 beneficiary farmers • 15 000 work days generated for 1 500 unemployed labourers (CFW) 	<ul style="list-style-type: none"> • Project progress reports • Engineering designs • Tender/procurement documents • Letters of agreement (LoAs) and contracts • WUA minutes • Farmer field school (FFS) diaries 	<ul style="list-style-type: none"> • Efficient tendering, contracting and procurement processes • Full participation of beneficiaries • Irrigation structures to be rehabilitated are

	CFW schemes completed			<ul style="list-style-type: none"> • CFW transfer statements • Photographs of assets repaired, rehabilitated or constructed taken before, during and after the CFW activities 	valuable to the communities
1.3. Support improved irrigation water efficiency and management	<ul style="list-style-type: none"> • Number of WUAs functioning • Number of FFSs implemented and monitored • Number of community-based CFW schemes completed • Number of beneficiaries provided with irrigation equipment • Number of beneficiaries practising on-farm water management 	<ul style="list-style-type: none"> • Damage and loss assessments • Socio-economic baseline surveys 	<ul style="list-style-type: none"> • 30 WUAs established or strengthened • 15 000 work days generated for 1 000 unemployed labourers (CFW) • 5 000 farmers provided with irrigation equipment • 10 000 farmers practising on-farm water management on 20 000 ha of land 		
2.1. Support small-scale cereal and legume seed supply systems	<ul style="list-style-type: none"> • Number of research stations (seed units) rehabilitated • Number of seed farms functioning • Number of FFSs and farmer business schools (FBSs) implemented 	<ul style="list-style-type: none"> • Damage and loss assessments • Value chain analyses 	<ul style="list-style-type: none"> • Seed units of three agricultural research stations and seed laboratories functioning and 80 staff trained • 550 seed farms established 	<ul style="list-style-type: none"> • Project progress reports • FAO technical reports • Engineering designs • Farm and small agribusiness development plans • LoAs and contracts 	<ul style="list-style-type: none"> • Full cooperation of government agencies • Efficient procurement processes • Full participation of the private sector

	<ul style="list-style-type: none"> • Number of public-private-community partnerships (PPCPs) functioning along seed supply chains 		<ul style="list-style-type: none"> • 22 FFSs successfully completed and reported • PPCPs developed along five seed supply chains 		
2.2. Support improved small-scale animal fodder production and marketing	<ul style="list-style-type: none"> • Number of research stations (seed units) functioning • Number of animal fodder seed farms functioning • Number of community-based CFW schemes completed • Number of animal fodder production packages provided and cash+ • Number of FBSs and FFSs implemented • Number of producer marketing groups (PMGs) and PPCPs functioning 	<ul style="list-style-type: none"> • Damage and loss assessments • Value chain analyses 	<ul style="list-style-type: none"> • Fodder seed units of five agricultural research stations rehabilitated and 25 staff trained • 500 animal fodder seed farms established • 45 000 work days generated for 3 000 unemployed labourers (CFW) • 2 000 small-scale farmers restored to animal fodder production • 20 FBSs and 80 FFSs successfully completed • 20 PMGs functioning and linked to 10 animal fodder value chains 	<ul style="list-style-type: none"> • Project progress reports • FAO technical reports • Farm and small agribusiness development plans • Input purchase orders • Cash+ and CFW transfer statements • LoAs and contracts • FFS and FBS diaries • PMG minutes • Private sector organization records/market transaction 	<ul style="list-style-type: none"> • Full cooperation of government agencies • Timely supply of agricultural inputs • Full participation of the private sector in value chains
2.3. Support vulnerable family farming returnees and remainees through the	<ul style="list-style-type: none"> • Number of cash+/vegetable/agr 	<ul style="list-style-type: none"> • Socio-economic baseline surveys • Value chain analyses 	<ul style="list-style-type: none"> • 80 extensionists trained • 20 000 smallholder farming families 	<ul style="list-style-type: none"> • Project progress reports • FAO technical reports 	<ul style="list-style-type: none"> • Timely transfer of cash payments

rehabilitation and strengthening of vegetable production and marketing	<ul style="list-style-type: none"> • oforestry input packages provided • Number of irrigated greenhouse input packages provided • Number of community-based CFW schemes completed • Number of FBSs implemented • Number of PMGs and PPCPs functioning 		<ul style="list-style-type: none"> • restored to homestead-based vegetable production • 300 small-scale farming families restored to irrigated greenhouse production • 15 000 work days generated for 1 000 unemployed labourers (CFW) • 52 FBSs successfully completed and reported • 52 PMGs functioning and linked to 25 PPCPs 	<ul style="list-style-type: none"> • LoAs and contracts • Farm and small agribusiness development plans • Input purchase orders • Cash+ and CFW transfer statements • Project training reports • FFS and FBS diaries • PMG minutes • Private sector organization records/market transactions 	<ul style="list-style-type: none"> • Timely supply of agricultural inputs • Full participation of beneficiaries • Full participation of the private sector in value chains
2.4. Support increased homestead-based poultry production	<ul style="list-style-type: none"> • Number of support services functioning • Number of cash+/poultry input packages provided • Number FFSs implemented • Number of community animal health workers (CAHWs) functioning 	<ul style="list-style-type: none"> • Socio-economic baseline surveys 	<ul style="list-style-type: none"> • 32 livestock extensionists trained and equipped • 2 500 vulnerable farming families restored to poultry production • 25 FFSs successfully completed and reported • 25 CAHWs trained and equipped 		
2.5. Support restocking of small ruminants and	<ul style="list-style-type: none"> • Number of support services functioning 	<ul style="list-style-type: none"> • Socio-economic baseline surveys 	<ul style="list-style-type: none"> • 50 veterinarians and extensionists trained 		

safeguarding animal survival, health and production	<ul style="list-style-type: none"> • Number of cash+/sheep and goat/feed packages provided • Number of CAHWs functioning • Number of FFSs implemented 		<ul style="list-style-type: none"> • 4 050 vulnerable farming families restored to sheep and goat production • 50 CAHWs trained and equipped • 50 FFSs successfully completed and reported 		
2.6. Support homestead-based agrifood processing and microenterprise development	<ul style="list-style-type: none"> • Number of cash+/agrifood processing input packages provided • Number of FBSs implemented • Number of PMGs and PPCPs functioning 	<ul style="list-style-type: none"> • Socio-economic baseline surveys • Value chain analyses 	<ul style="list-style-type: none"> • 30 government extensionists and NGO social mobilizers • 2 000 vulnerable farming families restored to agrifood processing • 80 FBSs successfully completed and reported • 20 PMGs established and linked to 25 agrifood value chains 		
2.7. Support to improve small-scale dairy processing and marketing	<ul style="list-style-type: none"> • Number of milk collection centres functioning • Number of dairy processing packages and cash+ provided • Number of FBSs implemented 	<ul style="list-style-type: none"> • Socio-economic baseline surveys • Value chain analyses 	<ul style="list-style-type: none"> • 10 PPCP milk collection centres established/rehabilitated • 3 000 small-scale farming families restored to milk production and dairy processing 		

	<ul style="list-style-type: none"> • Number of PMGs established and PPCPs developed 		<ul style="list-style-type: none"> • 120 FBSs successfully completed and reported • 40 PMGs functioning and linked to 10 dairy value chains 		
3.1. Support to improve capacity for conducting conflict-sensitivity analyses and monitoring at national, governorate and programme levels	<ul style="list-style-type: none"> • Number of programming staff practising conflict analyses • Number of conflict analyses conducted and endorsed by stakeholders 	<ul style="list-style-type: none"> • Lack of understanding in conflict-sensitive analysis and programming 	<ul style="list-style-type: none"> • 50 government and United Nations programming staff trained • 17 conflict analyses conducted at national, governorate and programme levels 	<ul style="list-style-type: none"> • Project progress reports • FAO technical reports • Conflict-sensitive programming documents • Strategy papers • Survey reports 	<ul style="list-style-type: none"> • Full cooperation of concerned government agencies, academic institutions, United Nations partners, etc.
3.2. Support to an improved understanding of food security and nutrition and stakeholder capacities to conduct and analyse socio-economic and biophysical assessments	<ul style="list-style-type: none"> • Number of surveys and analyses conducted (including remote sensing) and endorsed by stakeholders • Number of data collectors and analysts and GIS technicians practising modern techniques 	<ul style="list-style-type: none"> • Existing socio-economic and biophysical assessment and analysis methodologies 	<ul style="list-style-type: none"> • 50 government and non-governmental data collectors and analysts and GIS technicians trained and equipped • Eight national and government level socio-economic and biophysical assessments analysed and reported 	<ul style="list-style-type: none"> • Workshop proceedings • Monitoring reports • Evaluation reports 	<ul style="list-style-type: none"> • Timely provision of FAO technical assistance
3.3. Support to a well-coordinated and networked	<ul style="list-style-type: none"> • Number of decision-makers and 	<ul style="list-style-type: none"> • Existing food security, nutrition 	<ul style="list-style-type: none"> • 30 government and non-governmental decision- 		

food security, nutrition and natural resources information system to assess and monitor the situation in the retaken governorates	<p>technicians contributing to a food security, nutrition and natural resources information system</p> <ul style="list-style-type: none"> • Number of food security, nutrition and natural resources status reports • Number of food security, nutrition and natural resources strategy papers 	and natural resources information system systems	<p>makers and information management experts trained and equipped</p> <ul style="list-style-type: none"> • Six national and governorate-level strategy documents prepared 		
3.4. Support recovery and upgrading of Iraqi border surveillance and control of transboundary plant diseases and pests	<ul style="list-style-type: none"> • Number of facilities functioning • Number of staff and field scouts functioning • Number of integrated pest management (IPM)/FFS programmes initiated across the country 	<ul style="list-style-type: none"> • Damage and loss assessments • Stakeholder institutional assessments 	<ul style="list-style-type: none"> • 12 diagnostic laboratories and extension centres rehabilitated • 85 government staff trained • 100 field scouts trained and equipped • Five governorate-level IPM/FFS programmes launched and reported 	<ul style="list-style-type: none"> • Project progress reports • FAO technical reports • LoAs and contracts • Project training reports 	<ul style="list-style-type: none"> • Full cooperation of government agencies • Efficient procurement processes

3.5. Support recovery and upgrading of TAD surveillance and control systems in border areas of Iraq	<ul style="list-style-type: none"> • Number of facilities functioning • Number of technical staff and CAHWs functioning • Number of CAHW networks functioning • Number of animals vaccinated against TADs through well-managed campaigns 	<ul style="list-style-type: none"> • Damage and loss assessments • Stakeholder institutional assessments 	<ul style="list-style-type: none"> • 12 border control units, diagnostic laboratories and extension centres rehabilitated • 12 government decision-makers and 250 government/private veterinarians trained • 100 CAHWs trained and equipped • 10 district-level CAHW networks established • 70% of animals vaccinated 	<ul style="list-style-type: none"> • Project progress reports • FAO technical reports • LoAs and contracts • Project training reports 	<ul style="list-style-type: none"> • Full cooperation of government agencies • Efficient procurement processes • Full recognition of CAHW networks • Timely supply of drugs and medicines
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Annex II – Key intervention areas

Key intervention area 1.1.

Title:	Improved water-sharing arrangements in central Iraq
Relevance:	<p>The Tigris and Euphrates rivers provide nearly 80 percent of Iraq's total water resources. About 71 percent of the discharge flows from Turkey, 7 percent from Iran, 4 percent from the Syrian Arab Republic and only 8 percent from watersheds within Iraq. Blessed by the Tigris and Euphrates rivers, water resources in Iraq, as compared with the neighbouring countries, was relatively abundant in the 1970s. However, since the 1970s, due to dam constructions and irrigation development both in Turkey and the Syrian Arab Republic, the discharge of the Euphrates River within Iraq had decreased, resulting in poor water quality. This phenomenon has affected Iraq's water resource security and accordingly its water strategy. In the Euphrates River, the discharge was 23.6 billion cubic metres in the 1970s but dropped to about 16.9 billion cubic metres in the 1980s and, by 1989, salt concentration had increased to 1 000ppm. In the Tigris River, salinity values at the Turkish border is 280ppm but increases to 1 800ppm downstream of Basra. This is the result of irrigation of highly intensive agriculture, high evaporation rates, discharge from Tharthar Lake and wastewater from cities such as Mosul and Baghdad.</p> <p>Irrigated agricultural land accounts for about 64 percent of water use, a figure that undeniably has a huge impact on current water shortages. Domestic water and industry accounts for 8 percent, inland fisheries and animal husbandry accounts for 1 percent, wetland control for 8 percent, evaporation from rivers and reservoirs for 14 percent and discharge into the Persian Gulf for 5 percent.</p> <p>The Government of Italy-funded and FAO-implemented project entitled "Support Cooperation on Agricultural Water Resource Management in the Lower Mesopotamia (Tigris and Euphrates rivers)", which was due to run from 2012 to 2016 but closed in 2015 for security reasons, highlights water scarcity problems of not only Iraq, but Iran and the Syrian Arab Republic, as follows: (i) water is scarce and is likely to impact most on food security and agricultural production; (ii) little consideration is given to water quality, causing increased salinity and concentration of pollution thus negatively affecting irrigation activities and soil productivity; and (iii) decreased water availability due to climate change will have important implications for the future of water resources and associated hydropower generation and land-use management and planning in the region. Together with the instability in the region and the open areas of tension on water management and hydropower generation, there is a need to apply a sub-basin/sectoral approach that will introduce and</p>

	<p>implement a set of key alternatives for sustainable development process for the lower Mesopotamia countries.</p> <p>The Government of Iraq is predicting that the river flows in the middle and downstream areas of both rivers will not decrease because it anticipates a large extension of its water-saving policy for the irrigated agriculture sub-sector (Strategy for Water and Land Resources in Iraq (SWRLI)). The Government also has high expectations for irrigation projects through the promotion of the water-saving technologies. With the near-total destruction of water control and irrigation infrastructure across the governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din by the Islamic State of Iraq and the Levant (ISIL), this is the ideal time to revisit the SWRLI, reactivate concerned elements of the FAO project, “Support Cooperation on Agricultural Water Resource Management in the Lower Mesopotamia (Tigris and Euphrates rivers)” and improve the water-sharing arrangements between: (i) Iraq and neighbouring countries of the Tigris and Euphrates rivers’ catchments; and (ii) agricultural, domestic, industrial and environmental sectors of Iraq, while paying special attention to the reconstruction of conflict-affected areas.</p>
Objective:	To promote the sustainable development process for Iraq based on capacity building and strengthening the institutional capacities for improved agricultural water management through enhanced cooperation to address common problems of water resource management and the environment
Outcome:	Improved water-sharing arrangements across all sectors and within the agriculture sector with specific reference to the retaken areas of Iraq
Outputs and Key Activities:	<p>1. Data on Iraq’s water resources updated for evidence-based strategy development</p> <ul style="list-style-type: none"> • Strengthen the analytical capacity of water planners and water resources management specialists through training practitioners in the application of a series of water scarcity, water allocation and process evaluation and diagnostic tools, including training in the use of modern remote sensing techniques. • Conduct a study to assess the quantity and quality of water available to irrigated agriculture and other sectors, with specific reference to the five retaken governorates. • Organize stakeholder workshops at all levels of government to review the findings and recommendations of the aforementioned study and agree on the way forward for water resources management strategy development in Iraq. <p>2. Evidence-based water resources management strategies and action plans developed and adopted by stakeholders</p>

	<ul style="list-style-type: none"> • Review and update the Government’s “Strategy for Water and Land Resources in Iraq” to match assessed availability of water resources, measured against needs for human, animal and irrigated farming use and promote more equitable water-sharing arrangements between agricultural, domestic, industrial and environmental sectors of Iraq, while paying special attention to the reconstruction and recovery of water control systems in conflict-affected areas. • Coordinate national and governorate-level water resources management programmes prioritizing and planning for the reconstruction and recovery of water control and irrigation systems of central Iraq. • Prepare action plans for developing the capacities of government and non-governmental agricultural research institutes, service providers and lead irrigated farmers to: (i) increase water productivity through modern irrigation delivery and efficient on-farm water management technologies and practices; (ii) restore saline soils to agricultural productivity; and (iii) establish water users’ associations for the devolved operation and maintenance of irrigation systems. • Re-establish and further develop lower Mesopotamia cooperation and coordination mechanisms to: (i) promote information sharing on hydrological data, best practices, etc. and organise regular stakeholders’ meetings for reviewing lessons learned in terms of policy reform and implementation, programming and coordination in the energy and water sectors and propose concrete next steps to manage water resources at national and regional levels.
Target areas:	Whole of Iraq, with special emphasis on Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Target beneficiaries:	30 government and non-governmental water planners/policy makers, water resources management specialists and remote sensing/data analysts
Implementing partners:	Ministry of Water Resources, Ministry of Agriculture, Ministry of Health and Environment and Ministry of Planning
Duration:	24 months
Cost estimate	USD 500 000
SDG indicator:	6.4.1 (Change in water use efficiency over time)
FAO corporate indicators:	2.4.2 (Number of institutions that received capacity development support from FAO to collect, analyse and report data for decision-making that fosters sustainable production, address climate change and environmental degradation, including relevant SDGs)
FAO Regional Initiative:	Near East and North Africa’s regional water scarcity initiative

Key intervention area 1.2.

Title:	Support to the rehabilitation of water control and irrigation systems in central Iraq
Relevance:	<p>About 16 percent of Iraq, or seven million ha are classified as arable land, of which about 5.9 million ha are under irrigation or rainfed cropping. Most of the country's irrigated agriculture is found in the central and southern governorates, while rainfed agriculture is practiced in the more northern governorates. About 64 percent of cultivated land is irrigated, of which 3.3 million ha are under surface irrigation (i.e. 2.5 million ha within "government projects" and 900 000 ha are non-government), 426 000 ha under groundwater irrigation (i.e. 20 000 ha under government projects and 400 000 ha are non-government inclusive of 7 000 ha that are irrigated by springs). The rainfed area is about 2.175 million ha. From these figures, it is clear that most of the irrigated lands are under 142 government projects – half of which are found in the retaken governorates of Anbar (12 projects – 80 000 ha), Diyala (15 projects – 152 000 ha), Kirkuk (six projects – 76 900 ha), Ninewa (18 projects – 113 900 ha) and Salah al-Din (22 projects – 138 100 ha).</p> <p>The irrigation system in Iraq, diverting water mainly from the Tigris and Euphrates rivers, comprises 25 dams and weirs and 275 pumping stations, with a total network of about 27 000 km of canals. Besides the large-scale dams, smaller dams have also been constructed for water supply, animal use and to facilitate migration into the desert areas. Water in these reservoirs is also used for agriculture. Being constructed at the tributaries, the reservoirs, besides supplying non-contaminated water when discharge runs low, also recharge groundwater. Most of the small dams are constructed in Western Desert, Eastern and Kurdistan Regions.</p> <p>Prior to control by the Islamic State of Iraq and the Levant (ISIL), the Government's Strategy for Water and Land Resources in Iraq (SWRLI) estimated irrigation efficiency at between 30 and 40 percent. Nearly a quarter of main, branch and secondary canals had concrete linings while the percentage for tertiary canals is much higher at 42 percent. A further 2 percent of canals were pipelined. The low efficiency can be attributed to water losses along the structures. Also, insufficient levelling within plots also results in water loss, in particular flood irrigation. From the software perspective, SWRLI points out that water is also lost due to improper gate operation at the weirs and intakes. Some farmers arbitrarily pump water up to their own lands in cases of open channels. The policy allowing farmers to pump water freely into their respective fields with no irrigation service fee naturally enhances the habit of water wastage and thus results in low water use efficiency. Farmers' low farming</p>

	<p>technology, improper practice of intermittent irrigation and lack of agricultural inputs are some of the other reasons given for low productivity.</p> <p>Most irrigation systems are operated and maintained by six General Commissions of the Ministry of Water Resources (MoWR) with the recent establishment of only 70 devolved water users' associations (WUAs) across the country – 20 of which have been established across the five retaken governorates (i.e. 15 in Kirkuk, two in Diyala and one each in Anbar, Ninewa and Salah al-Din).</p> <p>In the retaken areas affected by the ISIL conflict, most infrastructure has been damaged, and the “fabric of society” has been adversely affected along with food production and income opportunities. Water supply/irrigation infrastructure including small pumps and wells, large pumping stations, canals, water reservoirs, electrical control systems, control gates, bridges, and pivotal/linear sprinklers were damaged or looted. From 2014 to the present day, farmers have reported a significant decrease in water supply due to the poor state of irrigation infrastructure. This has affected rural livelihoods with decreasing agricultural production, which leads to insufficient funds to buy agricultural inputs and fuel, which is exacerbated by increased prices for fuel and electricity to power the water pumps.</p> <p>The key intervention area (KIA) focuses on bringing irrigated land back into production through replacement/repair of water supply equipment commencing with priority equipment identified by the MoWR, which will help to eradicate losses, construct turnouts and water basins and rehabilitate pumping systems, plus water supply equipment and rehabilitation of irrigation infrastructure in general. In this context the KIA will focus on: (i) the repair and establishment of dams and reservoirs and establishment of irrigation control and discharge projects in Anbar Governorate; (ii) reconstruction of three vaults on a secondary canal, rehabilitation of damaged canal lining, rehabilitation of Sabaa Albour drain pump station and rehabilitation of Dijla and Al Rasasi Irrigation Projects in Salah al-Din Governorate; and (iii) repair to and maintenance of irrigation projects in Kirkuk Governorate.</p>
Objective:	To reduce the vulnerability of rural returnees and remainees through improved irrigation and domestic water security and increased income generation
Outcome:	30 water control and irrigation systems rehabilitated and functioning (covering 150 000 ha of land and benefiting 75 000 farmers)
Outputs and Key Activities:	<p>1. 100 water control and irrigation infrastructure and equipment repaired, constructed and/or replaced</p> <ul style="list-style-type: none"> • Conduct damage and loss assessments and surveys across selected irrigation systems of retaken areas.

	<ul style="list-style-type: none"> • Prepare engineering designs, bills of quantities, cost estimates and tender/procurement documents. • In close collaboration with all concerned stakeholders (i.e. government agencies, community-based organizations and water users), undertake feasibility studies and prioritize irrigation water control and systems for the fast-tracking of repair, rehabilitation and reconstruction works under the KIA. • Repair, rehabilitate and reconstruct damaged irrigation infrastructure (e.g. dams, canals, diversion gates and bridges) through MoWR-approved contractors for major works and community-based CFW interventions for unskilled works. • Procure, install and repair looted and damaged water control and irrigation equipment (e.g. pumps, generators and pipes) through enabled supply chains. <p>2. 15 000 work days of employment created for 1 500 unskilled labourers from local rural communities through cash-for-work (CFW) interventions</p> <ul style="list-style-type: none"> • Conduct a rapid assessment on the targeted water control and irrigation systems to identify labour-intensive works and activities suitable for CFW activities with a gender perspective. • Identify and contract implementing partners to facilitate selection of beneficiaries and monitor CFW activities. • Establish beneficiary selection committees at governorate, district and village levels for the identification of communities and their beneficiaries. • Organize community meetings to: (i) identify priority community needs and discuss the objectives of the CFW activities; and (ii) establish community coordination committees to identify and select beneficiaries according to agreed selection criteria (with a focus on youth) and to oversee CFW activities at the field level. • In close cooperation with the abovementioned contractors and community coordination committees, prepare works' schedules to implement and monitor CFW activities – ensuring that best practices for decent work are adhered to. • Identify and contract, through a competitive process, financial service providers to disburse cash transfers to beneficiaries through appropriate, secure and transparent mechanisms. <p>3. 10 WUAs have taken greater responsibility for operation and maintenance of irrigation infrastructure</p> <ul style="list-style-type: none"> • Establish, re-establish and/or strengthen WUAs for improved equitable water distribution and irrigation system maintenance, repairs and efficient water delivery (in collaboration with concerned MoWR General Commissions).
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	<ul style="list-style-type: none"> • Train elected leaders and appointed technicians of WUAs in group administration, operation and maintenance of irrigation structures and equipment, water governance, accounting and scheduling as well as small business management.
Target areas:	Irrigated farming areas of Anbar, Kirkuk and Salah al-Din governorates
Target beneficiaries:	<ul style="list-style-type: none"> • 75 000 vulnerable smallholder farming families (with reliable water supplies) • 1 500 unemployed labourers (benefiting from gainful employment through CFW interventions) • 30 WUA leaders (trained in water governance)
Implementing partners:	<ul style="list-style-type: none"> • MoWR (General Commissions for Operation of Irrigation and Drainage Projects, Irrigation and Reclamation Projects, Maintaining Irrigation and Drainage Projects, Dams and Reservoirs, Surveying and Groundwater) • National and international non-governmental organizations and community-based organizations
Duration:	24 months
Cost estimate:	USD 17 000 000
SDG indicators:	2.4.1 (Proportion of agricultural land under productive and sustainable agriculture); and 6.4.2 (Level of water stress: freshwater withdrawal as a proportion of fresh water resources)
FAO corporate indicators:	2.1.1 (Number of initiatives where innovative practices or the use of technologies are scaled up to sustainably increase productivity and production, while addressing climate change and/or environmental degradation); and 3.1.1 (Number of countries in which support was provided to expand the coverage of social protection to the rural poor, including in fragile and humanitarian contexts)
FAO Regional Initiatives:	Near East and North Africa's regional water scarcity initiative; and Building resilience for food security and nutrition in the Near East and North Africa

Key intervention area 1.3.

Title:	Support to improved irrigation water efficiency and management in central Iraq
Relevance:	<p>It is estimated that there are 73 government-owned irrigation schemes (with a total command area of 560 900 ha) in the five retaken governorates of Anbar (12 projects – 80 000 ha), Diyala (15 projects – 152 000 ha), Kirkuk (six projects – 76 900 ha), Ninewa (18 projects – 113 900 ha) and Salah al-Din (22 projects – 138 100 ha).</p> <p>Prior to control by the Islamic State of Iraq and the Levant (ISIL), the Government's Strategy for Water and Land Resources in Iraq (SWRLI) estimated irrigation efficiency at between 30 and 40 percent. Nearly a quarter of main, branch and secondary canals had concrete linings while the percentage for tertiary canals is much higher at 42 percent. A further 2 percent of canals were pipelined. The low efficiency can be attributed to water losses along the structures. Also, insufficient levelling within plots also results in water loss, in particular flood irrigation. From the software perspective, SWRLI points out that water is also lost due to improper gate operation at weirs and intakes. Some farmers arbitrarily pump water up to their own lands in the cases of open channels. The policy allowing farmers to pump water freely into their respective fields with no irrigation service fee naturally enhances the habit of water wastage and thus results in low water use efficiency. Farmers' low farming technology, improper practice of intermittent irrigation and lack of agricultural inputs are some of the other reasons for low productivity.</p> <p>Most irrigation systems are operated and maintained by six General Commissions of the Ministry of Water Resources (MoWR) with the recent establishment of only 70 devolved water users' associations (WUAs) across the country – 20 of which have been established across the five retaken governorates (i.e. 15 in Kirkuk, two in Diyala and one each in Anbar, Ninewa and Salah al-Din).</p> <p>There is no detailed information on the different irrigation methods at field level (e.g. flood, furrow, sprinkler and drip systems). However, it is known that most of the farmers practice flood irrigation. The Ministry of Agriculture (MoA) estimates that the area covered in Iraq under sprinkler irrigation in 2012 was about 99 000 ha. Due to climatic factors and salt concentration, sprinkler irrigation is more commonly practiced in northern and central areas than in southern Iraq.</p> <p>Prior to control by the Islamic State of Iraq and the Levant (ISIL), the Government's Strategy for Water and Land Resources in Iraq (SWRLI) estimated an average annual cropping ratio of between 70 and 85 percent – falling to 20 percent in drought years (e.g. 2011). Normally wheat and barley are planted in the late autumn and are growing during the winter under rainfed conditions, and if the winter rainfall is insufficient, the wheat/barley crops are</p>

	<p>supplemented with irrigation to finish the growing season until harvest. Following on is the planting of spring crops, which include beans, tomatoes, watermelons, sunflowers and jett, which are sometime planted in both spring and autumn. Spring vegetable crops are followed by similar crops during the autumn vegetable season, and with crop rotation with irrigation it allows for about 120 percent usage of the land, with the system being 80 percent of command areas used in the winter time and 40 percent in the spring and autumn time, with about a 20 percent overlap of crops or double cropping.</p> <p>The key intervention area (KIA) focuses on bringing irrigated land back into production through improved water governance and operation and maintenance of irrigation infrastructure, the introduction of new water-saving irrigation technologies (e.g. drip, sprinkler and hydroponic systems) and training of farmers in improved water-harvesting and on-farm water management practices for improvement of water use efficiency and production of food with a minimum amount of water and less harm to land resulting from excessive water use, which leads to soil salinity and waterlogging. The KIA will not only focus on those irrigation systems rehabilitated with the support of FAO (i.e. Anbar, Kirkuk and Salah al-Din governorates) but all functioning or partially functioning irrigation systems across the five retaken governorates.</p>
Objective:	To promote more efficient use of irrigation water for improved food security among vulnerable rural populations
Outcome:	10 000 vulnerable irrigated farmers (cultivating 20 000 ha of land) efficiently managing their irrigation water supplies and significantly increasing their crop production
Outputs and key activities:	<p>1. 30 WUAs have taken greater responsibility for the operation and maintenance of irrigation infrastructure</p> <ul style="list-style-type: none"> • Establish, re-establish and/or strengthen WUAs for improved equitable water distribution and irrigation system maintenance, repairs and efficient water delivery (in collaboration with concerned MoWR General Commissions). • Train elected leaders and appointed technicians of WUAs in group administration, operation and maintenance of irrigation structures and equipment, water governance, accounting and scheduling as well as small business management. <p>2. 15 000 work days of employment created for 1 000 unskilled labourers from local rural communities through cash-for-work (CFW) interventions.</p> <ul style="list-style-type: none"> • Conduct a rapid assessment on the targeted water control and irrigation systems to identify labour-intensive works and activities suitable for CFW activities with a gender perspective.

	<ul style="list-style-type: none"> • Identify and contract implementing partners to facilitate the selection of beneficiaries and monitor CFW activities. • Establish beneficiary selection committees at governorate, district and village levels for the identification of communities and their beneficiaries. • Organize community meetings to: (i) identify priority community needs and discuss the objectives of the CFW activities; and (ii) establish community coordination committees to identify and select beneficiaries according to agreed selection criteria (with a focus on youth) and to oversee CFW activities at the field level. • In close cooperation with the abovementioned contractors and community coordination committees, prepare works' schedules to implement and monitor CFW activities – ensuring that best practices for decent work are adhered to. • Identify and contract, through a competitive process, financial service providers to disburse cash transfers to beneficiaries through appropriate, secure and transparent mechanisms. <p>3. 5 000 smallholder farming families benefit from sets of irrigation equipment</p> <ul style="list-style-type: none"> • Conduct socio-economic baseline surveys and needs assessments for smallholder family farms most affected by the conflict (with data disaggregated by sex including qualitative information on the situation of women and men in the target population). • Establish and support beneficiary selection committees at governorate, district and village levels. • Select men, women and youth beneficiaries for KIA support; and prepare farm plans specifying the most appropriate irrigation system required. • Identify and prepare specifications for irrigation equipment (e.g. drip, sprinkler and hydroponic systems) that will make a significant impact on the restoration of smallholder irrigated crop production. • Supply chains for household and group-based irrigation equipment identified. • Supply KIA beneficiaries with sets of irrigation equipment according to agreed farm plans through voucher and/or in-kind distribution mechanisms. <p>4. 10 000 smallholder farming families practising new and improved on-farm water management and water-harvesting technologies and practices</p> <ul style="list-style-type: none"> • Provide in-service training to government and non-governmental agricultural extensionists in new and improved on-farm water management and water-harvesting technologies and practices and the farmer field school (FFS) approach to market-led, group-based participatory extension. • Mobilize, implement and monitor 100 FFSs (of 2 000 participating farmers) to demonstrate and upscale new and improved on-farm water management and water-harvesting technologies and practices, including
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	<p>training in the operation and maintenance of drip, sprinkler and hydroponic equipment received.</p> <ul style="list-style-type: none"> • Provide cash assistance to the poorest rural households engaged in CFW activities for constructing water-harvesting structures, canal cleaning and repair, land levelling, etc.
Target areas:	Irrigated farming areas of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Target beneficiaries:	<ul style="list-style-type: none"> • 10 000 vulnerable smallholder farming families (practising improved on-farm water management) • 1 000 unemployed labourers (benefiting from gainful employment through CFW interventions) • 30 WUA leaders (trained in water governance) • 30 government and non-government agricultural extensionists trained
Implementing partners:	<ul style="list-style-type: none"> • MoA and General State Board of Agriculture Extension Services • Directorate of Agriculture in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates • MoWR (General Commissions for Operation of Irrigation and Drainage Projects and Maintaining Irrigation and Drainage Projects) • National and international non-governmental organizations and community-based organizations
Duration:	24 months
Cost estimate:	USD 5 000 000
SDG indicators:	2.4.1 (Proportion of agricultural land under productive and sustainable agriculture); and 6.4.1 (Change in water use efficiency over time)
FAO corporate indicators:	2.1.1 (Number of initiatives where innovative practices or the use of technologies are scaled up to sustainably increase productivity and production, while addressing climate change and/or environmental degradation); and 3.1.2 (Number of countries in which support was provided to improve the rural poor's access to, and control over, a set of services, finance, knowledge, technologies, rural infrastructure, markets and natural resources, including in the context of climate change)
FAO Regional Initiative:	Near East and North Africa's regional water scarcity initiative; and Small-scale family farming in the Near East and North Africa

Key intervention area 2.1.

Title:	Support to the improved availability of quality cereal and legume seeds for vulnerable family farming returnees and remainees
Relevance:	<p>Iraq alone has lost about 40 percent of its agricultural production since the Islamic State of Iraq and the Levant (ISIL) took control of some of the most important agricultural areas of the country in 2014. Where ISIL lost territory it tended to follow a scorched-earth policy of destroying infrastructure and supply systems as it retreated. This has resulted in severe damage to agricultural facilities in the retaken areas, including damage to food storage and crop processing structures, as well as significant losses of farm machinery, equipment and tools.</p> <p>Total cultivated area (and production) for wheat in Iraq for 2014 was 2.1 million ha (5.1 million tonnes but only 1.04 million ha (2.7 million tonnes) for 2015, 900 000 ha (3.1 million tonnes) for 2016 and 1.05 million ha (3 million tonnes) for 2017. The scenario for barley has been worse, i.e. 250 000 ha (330 000 tonnes) in 2015, 270 000 ha (500 000 tonnes) in 2016 and 210 000 ha (300 000 tonnes) compared to 1.2 million ha (1.3 million tonnes) in 2014. Similarly for legumes, whereby 16 000 ha (23 000 tonnes) were cultivated (and produced) in 2013 but only 9 000 ha (14 000 tonnes) in 2014, 3 750 ha (7 000 tonnes) in 2015, 8 250 ha (13 000 tonnes) in 2016 and 7 250 ha (9 000 tonnes) in 2017. Figures were not available for the war-torn districts of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates but production would have been minimal. In 2014, Anbar, Ninewa and Salah al-Din governorates produced 46 and 69 percent of Iraq's total wheat and barley production respectively – the “bread basket” of the country.</p> <p>Certified seeds production in the five governorates during the ISIL-controlled period had been completely obstructed and discontinued resulting in non-availability of quality seeds for crop production purposes. Returnee and remainee farmers now face major problems in obtaining high-quality seed because of the destruction of seed processing plants and warehouses of seed companies operating in the region. Farmers have been forced to use low quality seeds if available from neighbours or in the local market.</p> <p>Cereal- and legume-growing farmers, in particular the returnees, remainees and those from host communities are facing challenges in obtaining high quality seed of wheat, barley, chickpeas, lentil, etc. and other inputs to resume their crop production cycles and increase food production. This is critical for protecting and rehabilitating rural livelihoods among conflict-affected populations (including returnees and remainees) through improved household food security as well as reduced poverty by generating income opportunities and creating employment (particularly for youth) in seed supply systems and the crops sub-sector as a whole.</p>

	<p>The key intervention area (KIA) will support the rehabilitation of seed supply chains, including the research stations, seed quality control agencies, seed growers, private seed associations and seed companies. This KIA aims to reproduce genetically pure seeds for the major environmentally adopted varieties in the target areas. The KIA will aim to assist vulnerable farmers residing in the five retaken governorates by enabling stakeholders to produce quality seeds estimated at 47 000 tonnes of wheat and 30 000 tonnes of barley over the next three years. This will cover an area of 1.3 million and 800 000 donum of wheat and barley respectively – with an expected production of 790 000 tonnes of wheat grain, which is sufficient to feed 6 million people for one year (representing 1 million families). In addition, wheat and barley straw can be utilized for animal feeding.</p>
Objective:	To improve food security and reduce poverty for smallholder returnee and remainee farming families through the restoration of seed supply systems for cereal and legume production
Outcome:	Cereal and legume seed supply systems for smallholder farmers rehabilitated, strengthened and functioning
Outputs and key activities:	<p>1. Three agricultural research stations restored for seed maintenance and breeder seed production in the retaken areas</p> <ul style="list-style-type: none"> • Conduct a damage needs assessment of the research centres in the retaken governorates. • Repair or rebuild the damaged agricultural research stations used for seed maintenance and breeder seed production. • Provide cash assistance to the poorest rural and peri-urban households engaged in cash-for-work activities for unskilled construction works. • Provide field machines, laboratory equipment and mobile seed processing plants to resume seed production activities. • Strengthen the capacity of 80 staff to improve their seed supply system knowledge and skills. • Select and initiate varietal maintenance for one or two varieties for each crop of wheat, barley, chickpea and lentil. • Provide pure genetic seed material to carry out varietal maintenance to produce nucleus seeds. • Produce breeder seeds for the aforementioned crops. <p>2. Seed testing and certification services restored in the retaken governorates</p> <ul style="list-style-type: none"> • Conduct a damage needs assessment for seed testing and certification in the retaken governorates, including the Government of Iraq's State Board for Seed Testing and Certification (SBSTC). • Provide seed laboratory equipment and materials to SBSTC and selected seed companies in order to carry out seed testing to international standards.

	<ul style="list-style-type: none"> • Provide in-service and abroad training to SBSTC and seed company staff and lead seed farmers on seed quality control, seed testing and certification regulations and standards, including field inspection, sampling and seed laboratory testing. • Re-evaluate and update, where appropriate, current regulation and seed standards at field and laboratory level. <p>3. 550 small-scale farmers engaged in the sustainable production of quality seeds</p> <ul style="list-style-type: none"> • Identify small-scale seed growers in coordination with SBSTC and governorate agricultural directorates. • Provide the seed growers with quality foundation and/or registered wheat, barley, chickpea and lentil seeds and fertilizers to resume seed production. • Strengthen the capacity of seed growers' associations, including the provision of field machines and mobile seed processing plants. • Provide training for seed growers on improved seed production techniques. • Mobilize, implement and monitor 22 farmer field schools for field demonstration and awareness raising of modern technologies (including mobile telephone apps), sharing of knowledge and capacity building of young technicians and young farmers in modern innovative approaches for seed system management. • Organize seed fairs for the strengthening of public-private-community partnerships for enhanced seed supply, marketing of quality seeds and rewarding of champion seed growers semi-privatised entrepreneurs.
Target areas:	Farming areas of the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din
Target beneficiaries:	<ul style="list-style-type: none"> • 80 government agricultural researchers and seed inspectors • 550 certified small-scale seed growers
Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture's General Directorate of Agricultural Research • Directorate of Agriculture in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates • Government of Iraq's SBSTC • International Center for Agricultural Research in Dry Areas • International Conference on Sustainable Agriculture and Development
Duration:	24 months
Cost estimate:	USD 6 030 000
SDG indicators:	2.1.1 (Prevalence of malnutrition); 2.3.1 (Volume of production per labour unit by classes of farming enterprise size); 2.3.2 (Average income of small-scale food producers by sex and indigenous status); and 2.4.1 (Proportion of agricultural land under productive and sustainable agriculture)

FAO corporate indicators:	2.1.2 (Number of initiatives where innovative practices or the use of technologies are scaled up to sustainably increase productivity and production, while addressing climate change and/or environmental degradation); 4.3.1 (Number of countries provided with FAO support to strengthen technical and managerial capacities of value chain actors); and 5.3.1 (Number of countries with improved application of integrated and/or sector-specific standards, technologies and practices for risk prevention and mitigation as a result of FAO support)
FAO Regional Initiative:	Small-scale family farming in the Near East and North Africa

Key intervention area 2.2.

Title:	Support to improved small-scale animal fodder production, conservation and marketing
Relevance:	<p>Livestock are important for the social and economic fabric of rural areas in Iraq. In 2009 the livestock population of Iraq was estimated at 2.55 million cattle, 7.72 million sheep, 1.47 million goats, and 0.29 million buffaloes (Central Statistics Office and FAO). These numbers clearly demonstrate the economic importance of livestock to the agriculture sector, as well as the great potential for providing employment opportunities in the productive and associated sectors. Increased productivity of livestock would improve the incomes of farmers, pastoralists and agro-industry workers, and reduce rural and peri-urban poverty levels. In addition, providing supplies to meet food needs, such as meat, milk and dairy products, which are rich sources of protein and essential amino acids, would ensure the food security and nutrition of vulnerable rural and peri-urban communities.</p> <p>For sustainable livestock development across the five retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din, there is an urgent need to enable farmers to produce and conserve fodder for their animals. The key intervention area (KIA) therefore aims to promote the practical application of new approaches in pasture management and fodder production (e.g. drought and heat-tolerant plants, such as old man's saltbush, cacti and clovers) and conservation (e.g. hay and silage making) for on-farm use and onward sale to market outlets through more effective animal fodder value chains.</p>
Objective:	To enhance animal feed security and rural incomes for smallholder returnee and remainee livestock-keeping families through improved animal fodder production and marketing
Outcome:	Animal fodder production, conservation and marketing systems improved for 2 500 smallholder returnee and remainee farming families (paying special attention to rural youth)
Outputs and Key Activities:	<p>1. Situation analysis of the animal feed sub-sector reported</p> <ul style="list-style-type: none"> • Conduct socio-economic baseline surveys and needs assessments for smallholder family farms most affected by the conflict (with data disaggregated by sex including qualitative information on the situation of women, men and youth for the target population). • Conduct value chain analyses for animal feed produced in target areas with recommendations for small-scale product development. • Develop, jointly with relevant stakeholders, selection criteria to identify suitable beneficiaries, prioritizing rural youth. • Establish and support beneficiary selection committees at provincial, district and village levels.

	<ul style="list-style-type: none"> • Select beneficiaries for KIA support (particularly young farmers). • Undertake feasibility studies and prepare small business plans for shortlisted beneficiaries. • Design innovative animal fodder production packages with technical specifications (e.g. seeds and seedlings drought and heat-tolerant grasses, shrubs and trees, appropriate irrigation equipment and homestead- and group-based conservation equipment and materials) that will make a significant impact on the restoration of smallholder livestock production. <p>2. 500 small-scale seed growers (particularly young farmers) benefit from animal fodder production and conservation packages</p> <ul style="list-style-type: none"> • Supply chains for household- and group-based animal fodder production and conservation packages identified. • Support five Ministry of Agriculture research stations with the experimental plantation of drought- and heat-tolerant fodder plants under small-scale agroforestry/silvi-pastoral systems through the supply of seeds and seedlings and associated agricultural inputs. • Supply 500 seed growers with animal fodder production and conservation packages according to agreed small-business plans through voucher and/or direct in-kind distribution mechanisms (depending on availability in local markets). • Mobilize, implement and monitor 20 farmer business schools (of 500 participating seed growers) to test, validate and replicate drought- and heat-tolerant species/varieties of fodder plants under agroforestry/silvi-pastoral systems and to develop small agribusinesses (including marketing). • Provide cash assistance to 3 000 of the poorest rural households engaged in cash-for-work activities for land preparation, tree planting, etc. <p>3. Ten animal fodder value chains developed/strengthened</p> <ul style="list-style-type: none"> • Establish and support 20 producer marketing groups (PMGs) selected from the more entrepreneurial seed growers in the development of small enterprises to collectively market animal fodder through concerned value chains. • Mobilize, implement and monitor 80 farmer field schools (of 2 000 participating farmers) to demonstrate and upscale innovative animal fodder production and conservation practices and technologies under agroforestry/silvi-pastoral systems. • Supply 2 000 small-scale livestock keepers with animal fodder production and conservation packages. The choice between direct in-kind distribution and a voucher system will depend on availability of animal fodder production and conservation equipment and materials in local markets. The option to carry out cash+ interventions (where beneficiaries receive cash transfers to address basic household needs and vouchers for the animal
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	<p>fodder production and conservation equipment and materials) will be explored and carried out depending on needs and local market conditions.</p> <ul style="list-style-type: none"> • Develop public-private-community partnerships to strengthen the connectivity of value chains to ensure full integration of PMGs with input suppliers, service providers and buyers/market outlets to process and package animal fodder.
Target areas:	Pastoral and agropastoral areas of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Target beneficiaries:	2 500 small-scale animal fodder seed farmers and livestock keepers with priority given to rural youth
Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture • Directorates of Agriculture in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates • Private sector organizations (e.g. chambers of commerce)
Duration:	24 months
Cost estimate:	USD 7 000 000
SDG indicators:	2.3.2 (Average income of small-scale food producers by sex and indigenous status); and 2.4.1 (Proportion of agricultural land under productive and sustainable agriculture)
FAO corporate indicators:	2.1.2 (Number of initiatives where innovative practices or the use of technologies are scaled up to sustainably increase productivity and production, while addressing climate change and/or environmental degradation); and 4.3.1 (Number of countries provided with FAO support to strengthen technical and managerial capacities of value chain actors)
FAO Regional Initiative:	Small-scale family farming in the Near East and North Africa

Key intervention area 2.3.

Title:	Support to vulnerable family farming returnees and remainees through the rehabilitation and strengthening of vegetable production and marketing
Relevance:	<p>Iraq has lost 40 percent of its overall agricultural production since the Islamic State of Iraq and the Levant (ISIL) took control of some of the most important agricultural areas of the country in 2014. Where ISIL lost territory it tended to follow a scorched-earth policy of destroying infrastructure, supply systems and market chains as it retreated. This has resulted in severe damage to agricultural facilities in the retaken areas, including damage to food storage and crop processing structures, as well as significant losses of farm buildings (e.g. greenhouses), equipment and tools.</p> <p>Farmers cultivate open field and greenhouse vegetable crops in all Iraqi governorates but particularly in Diyala, Kirkuk, Ninewa and Salah al-Din. In 2013, the total cultivated area for vegetables in Iraq was 115 300 ha, producing some 3.7 million tonnes. Because of ISIL control across central Iraq, the total annual area and production of vegetable crops for Iraq had been reduced to 33 700 ha and 1.01 million tonnes respectively by 2016. The main crops cultivated in the five retaken governorates are tomato, cucumber, watermelon, melon, pepper, squash, onion, okra, cabbage and eggplant.</p> <p>The 2016 World Food Programme/FAO joint Comprehensive Food Security and Vulnerability Analysis showed considerable gaps in Iraqi people's food security status caused by war, inaccessibility to areas under control and the obvious negative effect of the war on the fiscal base of the State, making it difficult to maintain large pre-conflict food and agriculture subsidy schemes. Attention is therefore needed to address the existing gaps in household food security and nutrition and help rebuild agricultural livelihoods by investing in entire value chains. The displaced people who have returned to their original villages were mostly practising agriculture as the main source of income before the conflict and they are facing major challenges after losing all or most of their assets and deterioration of their purchasing power.</p> <p>Vegetable-growing farmers, in particular returnees, remainees and those from host communities are facing further challenges in obtaining high quality seeds and other inputs to resume their production cycles and increase food production. This is critical for protecting rural livelihoods and empowering social protection systems among conflict-affected populations (including returnees and remainees) through improved household food nutrition as well as reduced poverty by generating income opportunities and creating employment (particularly for youth) along horticultural value chains.</p> <p>The key intervention area will support the restoration of homestead vegetable production among vulnerable smallholder farming families (in particular women) and irrigated greenhouse vegetable production among vulnerable</p>

	small-scale farming families with access to land and water – through cash+ and cash-for-work interventions – while strengthening agricultural support services and market linkages and creating employment (in particular for women and youth) along horticultural value chains.
Objective:	To enhance food nutrition and rural incomes for smallholder returnee and remainee farming families through the restoration of vegetable production
Outcome:	Vegetable production and marketing systems rehabilitated and strengthened for 20 300 smallholder returnee and remainee farming families
Outputs and key activities:	<p>1. Governorate-level agricultural extension services capable of supporting smallholder vegetable production</p> <ul style="list-style-type: none"> • Conduct a damage needs assessment of the horticulture research centres/stations in the retaken governorates and extension centres in target areas. • Repair or rebuild and equip priority research centres/stations and extension centres in target areas for vegetable varieties’ testing and demonstration and seedlings production. • Provide in-service training to 80 agricultural researchers and extensionists in improved climate-smart horticultural technologies and practices and the farmer field school (FFS) approach to market-led, group-based participatory extension. <p>2. Livelihood assets of 20 000 vulnerable smallholder vegetable growers increased</p> <ul style="list-style-type: none"> • Conduct baseline surveys and needs assessments for smallholder farming families most affected by the conflict; and selected beneficiaries from target areas (particularly women and female-headed households). • Restore the livelihoods of selected beneficiaries through cash+ interventions (i.e. a combination unconditional cash transfers, vouchers to purchase kits comprising quality vegetable seeds/seedlings, fodder/fruit tree seedlings and/or farm tools and training in improved (climate-smart) vegetable and agroforestry production practices). • Provide cash assistance to the poorest rural households engaged in cash-for-work (CFW) activities for land preparation, tree planting, etc. <p>3. 15 000 work days of employment created for 1 000 unskilled labourers from local rural communities through cash-for-work (CFW) interventions.</p> <ul style="list-style-type: none"> • Conduct rapid assessment to identify labor-intensive works and activities suitable for CFW activities in a gender perspective. • Identify and contract implementing partners to facilitate selection of beneficiaries and monitor CFW activities. • Establish beneficiary selection committees at governorate, district and village levels for the identification of communities and their beneficiaries.

	<ul style="list-style-type: none"> • Organize community meetings to: (i) identify priority community needs and discuss the objectives of the CFW activities; and (ii) establish community coordination committees to identify and selected beneficiaries according to agreed selection criteria (with a focus on youth) and to oversee CFW activities at the field level. • In close cooperation with the abovementioned contractors and community coordination committees, prepare works' schedules for, implement and monitor CFW activities – ensuring that best practices for decent work are adhered to. • Identify and contract, through competitive process, financial service providers to disburse cash transfers to beneficiaries through appropriate, secure and transparent mechanisms. <p>4. Productivity of 300 small-scale vegetable growers increased</p> <ul style="list-style-type: none"> • Conduct value chain analyses for vegetable products grown in target areas, undertake feasibility studies and prepare farm plans for shortlisted beneficiaries. • Prepare technical specifications, procure and supply – through voucher and/or in-kind distribution – sets of greenhouses, drip irrigation equipment, quality vegetable seeds/seedlings and post-harvest handling equipment to selected beneficiaries – according to agreed farm plans. • Provide cash assistance to the poorest rural households engaged in CFW activities for land clearance, greenhouse construction, etc. • Mobilize, implement and monitor FFSs for beneficiaries to learn improved CSA technologies and practices. <p>5. Post-harvest management and market access for beneficiary smallholder vegetable growers improved</p> <ul style="list-style-type: none"> • Establish 52 producer marketing groups (PMGs) to support the collective marketing of vegetable produce. • Implement and monitor 52 farmer business schools for vegetable growers to learn improved processing and packaging technologies and small agribusiness practices. • Develop 25 public-private-community partnerships to strengthen the connectivity of value chains to ensure full integration of PMGs with input suppliers, service providers and buyers/market outlets.
Target areas:	Farming areas of the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din
Target beneficiaries:	<ul style="list-style-type: none"> • 80 government and non-governmental agricultural extensionists • 20 300 vulnerable smallholder farm families • 1 000 unemployed labourers (CFW)

Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture • Directorate of Agriculture in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates • National and international non-governmental organizations and community-based organizations
Duration:	24 months
Cost estimate:	USD 10 000 000
SDG indicators:	2.1.1 (Prevalence of malnutrition); and 2.3.2 (Average income of small-scale food producers by sex and indigenous status)
FAO corporate indicators:	2.1.2 (Number of initiatives where innovative practices or the use of technologies are scaled up to sustainably increase productivity and production, while addressing climate change and/or environmental degradation); 4.3.1 (Number of countries provided with FAO support to strengthen technical and managerial capacities of value chain actors); and 5.4.2 (Number of countries affected by a crisis impacting agriculture in which FAO provided timely and gender-responsive crisis response)
FAO Regional Initiatives:	Small-scale family farming in the Near East and North Africa; and Building resilience for food security and nutrition in the Near East and North Africa

Key intervention area 2.4.

Title:	Support to vulnerable family farming returnees and remainees through increased homestead-based poultry production
Relevance:	<p>Anbar, Ninewa and Salah al-Din governorates were collectively one of the main sources of chicken meat and eggs in Iraq prior to being controlled by the Islamic State of Iraq and the Levant (ISIL). Much of the poultry production was smallholder in nature and was a good source of income in previous times as all villages were self-sufficient for chicken meat and eggs. The three retaken governorates have traditionally been a surplus region, supplying poultry commodities to other parts of Iraq. The recent conflicts and displacement have meant that poultry producing areas have been severely affected. Farmers have lost or sold their flocks, supply chains for chickens and poultry feed have been destroyed and smallholders have instead become consumers of poultry products – or gone without – thus increasing household malnutrition. There is now an urgent need to restore supply chains and assist the affected smallholder returnees and remainee farming families (particularly women and female-headed households) to recover their poultry production for household consumption and sale of surplus eggs, which would contribute to reviving local economic activity and provide a good source of protein for family consumption.</p> <p>Support is therefore urgently needed to provide immediate assistance to safeguard/restore the livelihoods of vulnerable returnees, remainees and host communities through quick impact interventions that are able to improve household food nutrition and income generation, such as homestead-based egg and chicken meat production. It is therefore crucial to rebuild the livestock asset base to kick-start and/or resume production, particularly among women returnees. Small ruminants play a major role in the nutrition of children, mainly as a source of revenue to buy food and through provision of eggs and meat. Depending on availability of poultry inputs in local markets, reflocking interventions will be conducted either via direct distribution of chickens and poultry feed and equipment or through the provision of vouchers to purchase chickens and, if necessary, feed and equipment from vendors. The implementation of a reflocking programme will also be an opportunity to boost the local economy and build capacity among local public or private service providers. The provision of animal health services will involve livestock extension agents, veterinary professionals and possibly para-veterinarians (e.g. community animal health workers (CAHWs)).</p>
Objective:	To enhance food nutrition and rural incomes for smallholder returnee and remainee farming families through the restoration of homestead-based poultry production

Outcome:	Poultry production and local egg marketing systems rehabilitated and strengthened for 2 500 smallholder returnee and remainee farming families (particularly women and female-headed households)
Outputs and key activities:	<p>1. Situation analysis of the smallholder poultry sub-sector reported</p> <ul style="list-style-type: none"> • Conduct socio-economic baseline surveys and needs assessments for smallholder family farms most affected by the conflict (with data disaggregated by sex including qualitative information on the situation of women and men for the target population). • Establish and support beneficiary selection committees at provincial, district and village levels. • Select beneficiaries for key intervention area support (particularly women farmers). • Design homestead-based poultry production packages that will make a significant impact on the restoration of smallholder egg (and longer-term meat) production. <p>2. 2 500 smallholder farming families (particularly female-headed households) benefit from poultry production packages</p> <ul style="list-style-type: none"> • Procure and transport 50 000 cocks and laying hens (at 16 to 18 weeks of age), 5 000 drinkers and feeders and 750 tonnes of poultry feed to selected distribution sites. • Distribute 2 500 poultry production packages (i.e. 20 cocks and hens, two drinkers and feeders and 300 kg of poultry feed) to selected beneficiaries. <p>3. Support services for homestead-based poultry production strengthened.</p> <ul style="list-style-type: none"> • Train 32 livestock extensionists to organize awareness campaigns and implement farmer field school (FFS) programmes for men and women farmers on the best methods of poultry production for better economic performance commensurate with local conditions. • Identify, train and equip 25 CAHWs to provide basic animal health services within local communities and FFSs. • Mobilize, implement and monitor 25 FFSs to promote improved poultry production, egg grading and meat processing, packaging and storage and food-based nutrition and develop/strengthen linkages along value chains for the collective marketing of eggs and meat.
Target areas:	Poultry producing areas of the retaken governorates of Anbar, Ninewa and Salah al-Din
Target beneficiaries:	<ul style="list-style-type: none"> • 2 500 small family farming households (i.e. 15 000 individuals) • 32 livestock extensionists • 25 CAHWs

Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture • General State Company for Livestock Services and General State Board of Agriculture Extension Services. • Directorates of Agriculture in Anbar, Ninewa and Salah al-Din governorates • National and international non-governmental organizations and community-based organizations
Duration:	24 months
Cost estimate:	USD 1 800 000
SDG indicators:	2.1.1 (Prevalence of malnutrition); and 2.3.2 (Average income of small-scale food producers by sex and indigenous status)
FAO Corporate Indicator:	5.4.2 (Number of countries affected by a crisis impacting agriculture in which FAO provided timely and gender-responsive crisis response)
FAO Regional Initiatives:	Building resilience for food security and nutrition in the Near East and North Africa; and Small-scale family farming in the Near East and North Africa

Key intervention area 2.5.

Title:	Support to vulnerable family farming returnees and remainees through the restocking of small ruminants and safeguarding animal survival, health and production
Relevance:	<p>Livestock are important for the social and economic fabric of rural areas in Iraq, particularly in the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din. In 2009 the livestock population of Iraq was estimated at 2.55 million cattle, 7.72 million sheep, 1.47 million goats, and 0.29 million buffaloes (Central Statistics Office and FAO). These numbers clearly demonstrate the economic importance of livestock to the agriculture sector, as well as the great potential for providing employment opportunities in the productive and associated sectors. Increased productivity of livestock would improve the incomes of farmers, pastoralists and agro-industry workers, and reduce rural and peri-urban poverty levels. In addition, providing supplies to meet food needs, such as meat, milk and dairy products, which are rich sources of protein and essential amino acids, would ensure the food security and nutrition of vulnerable rural and peri-urban communities.</p> <p>Livestock in Iraq has been adversely affected by the conflict. Since 2013, the governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din in Iraq have faced a large-scale humanitarian crisis due to the violent rise of the Islamic State of Iraq and the Levant (ISIL) and the subsequent military campaign against the group. In 2017, it was estimated that ISIL control had reduced Iraq's agricultural production capacity by 40 percent. In particular, the conflict has caused major disruption of livelihoods connected to livestock rearing. Animals have been looted, slaughtered, stolen or otherwise missing upon the return of internally displaced people.</p> <p>Other factors that have led to the loss of a number of animals and low production levels include: (i) the cessation of breeding and genetic improvement programmes in the country; (ii) infections by different types of animal diseases, such as <i>peste des petits ruminants</i>, foot and mouth disease and brucellosis; (iii) the lack of or shortage of pasture and animal feed; (iv) ineffective veterinary services; and (iv) the cessation of state support to animal breeders. However, if conditions are appropriate for improvement, especially in governorates where basic requirements are present (e.g. pastures, feed sources and experienced breeders), it is possible to double the production and productivity levels of the flock in affected areas of central Iraq.</p> <p>It is therefore crucial to rebuild the livestock asset base to kick-start and/or resume production, particularly among women returnees. Small ruminants play a major role in the nutrition of children, mainly as a source of revenue to buy food and through provision of milk and meat. Depending on availability of livestock in local markets, restocking intervention will be conducted either via</p>

	<p>direct distribution of animals and animal feed or through the provision of vouchers to purchase animals and, if necessary, feed from vendors. The implementation of a restocking programme will also be an opportunity to boost the local economy and build capacity among local public or private service providers. The provision of animal health services will involve livestock extension agents, veterinary professionals and possibly para-veterinarians (e.g. community animal health workers (CAHWs)).</p>
Objective:	To enhance food nutrition and rural incomes for smallholder returnee and remainee livestock-keeping families through the restoration of sheep and goat production
Outcome:	Increased production and improved productivity of sheep and goats for the families of 4 050 smallholder livestock keepers.
Outputs and key activities:	<p>1. Situation analysis of the small ruminant sub-sector reported</p> <ul style="list-style-type: none"> • Conduct socio-economic baseline surveys and needs assessments for smallholder family farms most affected by the conflict (with data disaggregated by sex including qualitative information on the situation of women and men for the target population). • Assess the quantity and quality of essential local support services (i.e. animal health, extension services and markets). • Assess the carrying capacity of grazing area (i.e. water and animal feed resources). • Assess the number of households that have lost animals and could be considered suitable for sheep and goat provision, including an assessment of capacity to manage livestock and a conflict-sensitive analysis of the impact of the key intervention area (KIA); gender equity will also be addressed at this stage. • Assess the number and types of small ruminants required for the KIA available at local markets, as well as potential sources of livestock (i.e. markets, breeding centres and commercial or government farms). <p>2. 4 050 livestock keepers benefit from the restocking of sheep and goats</p> <ul style="list-style-type: none"> • Establish “re-stocking committees” and identify beneficiaries: a multi-disciplinary/multi-agency restocking committee is best placed to organize selection of beneficiaries and oversee a restocking programme. Membership of the committee may include those directly involved, such as senior local administrators, District Veterinarian Officers, livestock specialists/consultants, local livestock traders and farmer/herder representatives from the targeted communities. • Procure and distribute 14 000 healthy sheep and goats and/or vouchers for the purchase of sheep and goats sold by private vendors. The choice between direct distribution and vouchers will depend on availability of animals in local markets. The option to carry out cash+ interventions

	<p>(where beneficiaries receive cash transfers to address basic household needs and vouchers for the purchase of sheep and goats and wherever necessary animal feed) will be explored and carried out depending on needs and local market conditions.</p> <ul style="list-style-type: none"> • Develop the productive performance of domestic sheep and goats through the introduction of genetically improved animals (e.g. pregnant Awassi ewes, Awassi rams and pregnant Shamee goats) – numbers will depend on the local availability of such animals. <p>3. Support services for smallholder livestock keepers strengthened.</p> <ul style="list-style-type: none"> • Train 50 livestock extensionists to organize awareness campaigns and implement farmer field school (FFS) programmes for livestock keepers on the best methods of rearing sheep and goats for better economic performance commensurate with local conditions. • Identify, train and equip 50 CAHWs to provide basic animal health services within local communities and FFSs. • Mobilize, implement and monitor 50 FFSs to promote improved sheep and goat husbandry and agrifood processing, packaging and storage and food-based nutrition and develop/strengthen linkages along value chains for the collective marketing of milk, meat, wool, etc.
Target areas:	Livestock rearing areas of the retaken governorates of Anbar, Diyala, Ninewa and Salah al-Din
Target beneficiaries:	<ul style="list-style-type: none"> • 4 050 smallholder livestock-keeping families (i.e. 24 300 individuals), during the first production season and increased during following seasons • 50 livestock extensionists • 50 CAHWs
Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture • General State Company for Livestock Services, General State Company for Veterinary Services and General State Board of Agriculture Extension Services. • Directorates of Agriculture in Anbar, Diyala, Ninewa and Salah al-Din governorates • National and international non-governmental organizations and community-based organizations
Duration:	24 months
Cost estimate:	USD 13 000 000
SDG indicators:	2.1.1 (Prevalence of malnutrition); and 2.3.2 (Average income of small-scale food producers by sex and indigenous status)
FAO corporate indicators:	2.1.2 (Number of initiatives where innovative practices or the use of technologies are scaled up to sustainably increase productivity and production,

	while addressing climate change and/or environmental degradation); and 5.4.2 (Number of countries affected by a crisis impacting agriculture in which FAO provided timely and gender-responsive crisis response)
FAO Regional Initiatives:	Building resilience for food security and nutrition in the Near East and North Africa; and Small-scale family farming in the Near East and North Africa

Key intervention area 2.6.

Title:	Support to vulnerable family farming returnees and remainees through improved homestead-based agrifood processing and microenterprise development
Relevance:	<p>Since 2013, the governorates of Anbar, Diyala, Kirkurk, Ninewa and Salah al-Din have faced a large-scale humanitarian crisis due to the influx of Syrian refugees, the violent rise of the Islamic State of Iraq and the Levant (ISIL) and the subsequent military campaign against the group. Displacement and loss of assets and income opportunities, together with disruptions across agrifood chains from farms to markets, is exposing a large number of vulnerable people to food insecurity and malnutrition.</p> <p>The large number of refugees, internally displaced people, returnees and remainees has created competition for labour as well as increased pressure on local food production. Prior to ISIL control, the agriculture sector in the conflict-affected areas had been declining and has been identified by the Government of Iraq as an important area for rehabilitation and development. Affected populations come from a mix of rural and urban areas, a number of whom have small-scale agricultural backgrounds in various types of livestock rearing and horticultural production. In general, Iraqi populations have become increasingly urbanized due to lack of investment in the agriculture sector and perceived opportunities. Additionally, while 70 percent of the population lives in urban areas, food insecurity and poverty are disproportionately concentrated in rural areas, where two-thirds of food insecure people are located. The effects of the influx of large numbers of returnees will be felt the most by those remainees who are already vulnerable to food insecurity, poverty and lack of job opportunities.</p> <p>Furthermore, the crisis has particularly impacted smallholder farmers and host communities including their homestead agricultural activities such as production of vegetables, fruits and small livestock. Agricultural production and food security has been further impacted by disruptions to central procurement and distribution systems, particularly fuel supplies, harvest subsidies and payments and food supply chains. Loss of income and immediate food sources essential for dietary sufficiency and diversity (e.g. eggs, milk, meat and fresh vegetables and fruits) will translate into greater reliance on food basket assistance over an extended period of time, or malnourishment, particularly among returnees and the poor in the receiving communities. Thus, the severely affected populations face a dangerous multifaceted threat of reduced food production and access, rising food prices beyond the reach of the poor and market dependent households, reduced government subsidies, livelihood loss and, ultimately, depletion of their resource base and purchasing power.</p> <p>Moreover, there are concerns that public distribution systems are overstrained, the supply of essential resources is severely limited in highly affected areas, and</p>

	<p>essential support to returnees and poor households might not be available to the most vulnerable.</p> <p>Iraq imports more than 80 percent of its food needs, in particular cereals, meat, refined sugar, cooking oil, canned and processed food, fruits and vegetables, dairy products, dried fruits and nuts, and fruit juices. This is despite the fact that Iraq is a resource-rich country where the agriculture sector has the potential for long-term sustained growth to cover a significant amount of domestic food consumption as well as for export, particularly for horticultural and animal products. Given this fact, most of the fruits and vegetables delivered to the wholesale markets have been damaged by inappropriate handling, processing, packaging and transport. The value chain of most food commodities is inefficient, and value addition of the food sector in general is very low.</p> <p>This key intervention area (KIA) addresses the socio-economic priorities of affected populations with a focus on community empowerment and the promotion of income-generating/job creation activities for both returnees and remainees of rural and peri-urban communities with special attention given to women and youth. More specifically, the KIA aims at increasing the capability of rural and peri-urban communities in affected governorates to engage in viable homestead and group-based agrifood microenterprises, while strengthening local market linkages for commodities produced, and therefore reducing dependency on relief assistance and helping people to move towards sustainable livelihoods in more efficient ways. The KIA also aims to improve household nutrition through the production and processing of fresh micronutrient-rich and protein-rich fruits, vegetables, eggs, meat and milk products.</p>
Objective:	To enhance food nutrition and rural incomes for smallholder returnee and remainee farming families through the restoration of homestead-based agrifood processing and marketing
Outcome:	Agrifood processing-based microenterprises rehabilitated and strengthened for 2 000 smallholder returnee and remainee farming families (local enterprises could include fruit and vegetable grading, cleaning and packaging, bread making, vegetable pickling, jam and sweet making, fruit drying, sauce and vinegar making, yoghurt and cheese making, beekeeping and honey production and packaging, and wool cleaning, grading and baling)
Outputs and key activities:	<p>1. Situation analysis of homestead-based agrifood processing reported</p> <ul style="list-style-type: none"> • Conduct socio-economic baseline surveys and needs assessments for smallholder family farms most affected by the conflict (with data disaggregated by sex including qualitative information on the situation of women, men and youth for the target population).

	<ul style="list-style-type: none"> • Conduct value chain analyses for agrifood products produced in target areas with recommendations for microenterprise development of selected products. • Develop, jointly with relevant stakeholders, selection criteria to identify suitable beneficiaries, prioritizing women. • Establish and support beneficiary selection committees at governorate, district and village levels. • Select beneficiaries for KIA support (particularly women and youth). • Undertake feasibility studies and prepare small business plans for shortlisted beneficiaries. • Design homestead-based agrifood processing packages with technical specifications that will make a significant impact on the restoration of household nutrition and income generation (as well as community employment generation). <p>2. 2 000 smallholder farming families (particularly women and female-headed households and youth) benefit from agrifood processing packages</p> <ul style="list-style-type: none"> • Supply chains for equipment, utensils, containers and packaging materials required of selected homestead-based agrifood processing packages identified. • Provide KIA beneficiaries with agrifood processing packages according to agreed small-business plans. The choice between direct in-kind distribution and a voucher system will depend on availability of agrifood processing equipment, utensils, containers and packaging materials in local markets. The option to carry out cash+ interventions (where beneficiaries receive cash transfers to address basic household needs and vouchers for the equipment, utensils, containers and packaging materials) will be explored and carried out depending on needs and local market conditions. • Mobilize, implement and monitor 80 farmer business schools (of 2 000 participants) to demonstrate and scale up agrifood processing, packaging and storage technologies, food safety/quality control measures and small business development principles. <p>3. 25 agrifood commodity value chains developed/strengthened</p> <ul style="list-style-type: none"> • Train 30 government extensionists, NGO social mobilizers and local business people as FBS facilitators to guide KIA beneficiaries through the microenterprise development process. • Establish and support 20 producer marketing groups (PMGs) to collectively market the processed agrifood commodities; leaders of the PMGs will be further trained in group administration, collective marketing, contract negotiation, small agribusiness development, etc. • Develop public-private-community partnerships to strengthen the connectivity of the value chains (e.g. pricing and market information) to
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	ensure full integration of PMGs with input suppliers, service providers and buyers/market outlets for agrifood commodities produced.
Target areas:	Rural and peri-urban areas of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Target beneficiaries:	2 000 returnee and remainee households in retaken areas (with a focus on women, female-headed households and youth)
Implementing partners:	<ul style="list-style-type: none"> • Directorates of Agriculture in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates • National and international non-governmental organizations and community-based organizations • Private sector organizations (e.g. chambers of commerce)
Duration:	24 months
Cost estimate:	USD 6 000 000
SDG indicators:	2.1.1 (Prevalence of malnutrition); and 2.3.2 (Average income of small-scale food producers by sex and indigenous status)
FAO corporate indicators:	4.3.1 (Number of countries provided with FAO support to strengthen technical and managerial capacities of value chain actors); and 5.4.2 (Number of countries affected by a crisis impacting agriculture in which FAO provided timely and gender-responsive crisis response)
FAO Regional Initiative:	Building resilience for food security and nutrition in the Near East and North Africa

Key intervention area 2.7.

Title:	Support to vulnerable family farming returnees and remainees through improved small-scale dairy processing and marketing
Relevance:	Agricultural production, food security and nutrition and rural livelihoods have been severely harmed by years of conflict in Iraq. Displacement, loss of assets and income opportunities, together with disruptions across the food chain from farms to markets, are exposing a large number of vulnerable people to food insecurity and poverty. The large influx of displaced people, returnee and remainee populations and hosting households is increasing competition for the labour market, exerts increased pressure on local food production, and represents an increasing challenge to those already vulnerable to food insecurity and poverty, particularly in rural areas. Milk production and dairy value chains used to play a very important role in the agriculture sector of Diyala, Ninewa and Salah al-Din governorates, which have suffered from the conflict. The sub-sector needs to be restored to achieve food security, improve nutrition, and create income opportunities, especially for women involved in the dairy value chain. Support should be provided to returnees and host households, to rebuild small-scale milk production, prioritizing female actors in the dairy value chain.
Objective:	To enhance food nutrition and rural incomes for smallholder returnee and remainee livestock-keeping families through the restoration of dairy production and marketing
Outcome:	Dairy production and marketing systems rehabilitated and strengthened for 3 000 smallholder returnee and remainee farming families (paying special attention to female dairy producers)
Outputs and key activities:	<ol style="list-style-type: none"> 1. Situation analysis of the dairy sub-sector reported <ul style="list-style-type: none"> • Conduct socio-economic baseline surveys and needs assessments for smallholder family farms most affected by the conflict (with data disaggregated by sex including qualitative information on the situation of women, men and youth for the target population). • Conduct value chain analyses for dairy products produced in target areas with recommendations for small-scale product development. • Develop, jointly with relevant stakeholders, selection criteria to identify suitable beneficiaries, prioritizing women. • Establish and support beneficiary selection committees at provincial, district and village levels. • Select beneficiaries for key intervention area (KIA) support (particularly women and young farmers). • Undertake feasibility studies and prepare small business plans for shortlisted beneficiaries.

	<ul style="list-style-type: none"> • Design homestead and group-based milk production and dairy processing packages with technical specifications (e.g. milking machines, processing and storage/cooling equipment and packaging materials) that will make a significant impact on the restoration of smallholder production of milk and dairy products. <p>2. 2 000 smallholder farming families (particularly women and female-headed households) benefit from dairy production packages</p> <ul style="list-style-type: none"> • Supply chains for equipment, containers and packaging materials required of household and group-based milking and dairy processing packages identified. • Supply KIA beneficiaries with milking and dairy processing packages according to agreed small-business plans. The choice between direct in-kind distribution and a voucher system will depend on availability of milking and dairy processing equipment, containers and packaging materials in local markets. The option to carry out cash+ interventions (where beneficiaries receive cash transfers to address basic household needs and vouchers to buy the milking and dairy processing equipment, containers and packaging materials) will be explored and carried out depending on needs and local market conditions. <p>3. Ten dairy value chains developed/strengthened</p> <ul style="list-style-type: none"> • Eight milk collection centres established and two existing collection centres rehabilitated through input supply and cash for work (targeting rural youth for the reconstruction of facilities). • Establish and support ten producer marketing groups (PMGs) to supply and operate the milk collection centres (with 1 000 members); leaders of the PMGs will be trained in milk collection, storage and processing technologies, group administration and small agribusiness development. • Mobilize, implement and monitor 120 farmer field schools (of 3 000 participants) to promote improved animal husbandry (i.e. cows, buffaloes, goats and sheep), milk processing and storage technologies and food safety/quality control and small business development (including marketing of milk and dairy products). • Select 1 000 of the more entrepreneurial beneficiaries and implement and monitor 40 farmer business schools for the promotion of microenterprise development and further commercialization of their dairy products. • Develop public-private-community partnerships to strengthen the connectivity of the value chains (e.g. pricing and market information) to ensure full integration of PMGs with input suppliers, service providers and buyers/market outlets for dairy products.
Target areas:	Milk producing areas of Diyala, Ninewa and Salah al-Din governorates

Target beneficiaries:	3 000 small-scale dairy farmers with priority given to female-headed households and women milk producers and dairy processors (and youth)
Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture • Directorates of Agriculture in Diyala, Ninewa and Salah al-Din governorates • Private sector organizations (e.g. chambers of commerce)
Duration:	24 months
Cost estimate:	USD 8 000 000
SDG indicator:	2.3.2 (Average income of small-scale food producers by sex and indigenous status)
FAO corporate indicators:	2.1.2 (Number of initiatives where innovative practices or the use of technologies are scaled up to sustainably increase productivity and production, while addressing climate change and/or environmental degradation); and 4.3.1 (Number of countries provided with FAO support to strengthen technical and managerial capacities of value chain actors)
FAO Regional Initiative:	Small-scale family farming in the Near East and North Africa

Key intervention area 3.1.

Title:	Support to conflict-sensitivity analysis and monitoring at national, governorate and programming levels
Relevance:	<p>Disenfranchisement of vulnerable populations caused by fragile peace agreements, ongoing protracted conflicts, social unrest, localized instability in isolated areas and struggles over the control of natural resources is compounding poverty and food security and nutrition problems. Impacts of the activities of armed groups, international criminality, and climate change exacerbates underlying causes of conflict and hunger as the spectres of high profile events such as armed attacks and droughts stalk the region continually. Investments in agriculture and creating viable jobs in the sector prior to the current crisis had indirect effects on controlling migration from rural to urban areas and contributed to social stability and local peace building efforts. Investments prioritizing the creation of decent on and off-farm income-generating opportunities (e.g. cash for work and small agribusiness development) – if accompanied with stronger social protection systems and targeted support for youth entrepreneurialism and employment – may help ease the long-term pressures that drive irregular migration to the Gulf countries, support the peace-building process and build resilience.</p> <p>Do no harm, conflict sensitivity and social cohesion share a common foundation and for the most, the same objectives. With its origins in “do no harm,” conflict sensitive interventions seek to: (i) understand the operational context; (ii) understand the interaction between the intervention and the context; and (iii) act upon the understanding of this interaction to avoid negative impacts and maximize positive impacts. Social cohesion is perhaps more targeted and looking to orient interventions in support of creating or improving the cohesion or sense of community between rural and peri-urban communities and farming groups.</p> <p>Conflict sensitivity is increasingly demanded as a standard by resource partners for interventions in fragile and conflict-affected contexts, though could also be considered as a fundamental part of “good programming” in complex environments. It could be expected that future funding by traditional resource partners will be highly dependent on implementing agencies adopting conflict-sensitive approaches and a rigorous monitoring and evaluation regime.</p> <p>Considering the above and to ensure that FAO can continue to fulfil its mandate in such areas as supporting smallholder farmers and the resilience of rural and peri-urban communities, two actions to include conflict-sensitive programming are provided below. Although the phraseology may differ slightly, the two actions have the same objective – that of creating an institutional understanding of the local context to ensure that FAO programming does not inadvertently contribute to fuelling community tensions and reigniting conflict,</p>

	<p>and where possible how FAO programming can achieve its sub-programme objectives while also looking for pathways to solidify local peace.</p> <p>Supported by the Corporate Framework, FAO has developed organization-specific tools and training for staff to: (i) understand the context in which FAO operates; (ii) understand the interaction between the intervention and the context; and (iii) act upon the understanding of this interaction to avoid negative impacts and maximize positive impacts.</p>
Objective:	To inform conflict-sensitive sub-programme design, implementation and monitoring and evaluation
Outcome:	Conflict analysis informs the design and implementation of the sub-programme's interventions (including monitoring and evaluation)
Outputs and key activities:	<p>1. The conflict analysis will establish a baseline assessment of the social stability context that will enable regular monitoring of that context. The development of scenarios and associated indicators would also inform recommendations for sub-programme reorientation, if required. Within the first four months of the sub-programme, a FAO-specific conflict analysis with linkages with the United Nations' common system Conflict and Development Analysis will be conducted. The analysis will be informed by the core sub-programme interventions and the prevailing national context, though will focus on more specific considerations within the geographically identified implementation areas (i.e. "meso-analysis"). The proposed initial structure of the analysis will comprise:</p> <ul style="list-style-type: none"> • Macro-level analysis: Assessment of the national, regional and international factors that contribute to the context. • Meso-level analysis: The area assessments comprise a livelihoods overview, stakeholder mapping, causal analysis, peace and conflict drivers analysis and scenario planning at the governorate and district levels. • Programme analysis: The final section of the analysis assesses the interaction between the local context and the sub-programme and provides recommendations for design and implementation. These recommendations will extend to staffing, partners, service providers and contractors, as well as in local procurement actions of sub-programme interventions. <p>2. Capacity of sub-programme staff and partners developed on conflict-sensitive programming.</p> <ul style="list-style-type: none"> • FAO has developed several tools and an applied participatory approach to conflict-sensitive capacity development. Workshops have been conducted at the regional level, including the Regional Office for the Near East and North Africa with staff from the Iraq country office in attendance. FAO will organize training for programme staff and identified partners on conflict sensitivity in the initial sub-programme phase.

Target areas:	Whole of Iraq, with special emphasis on Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Target beneficiaries:	<ul style="list-style-type: none"> • 50 planning and programming staff of the Ministry of Agriculture (MoA), the Ministry of Health and Environment (MoHE), the Ministry of Water Resources (MoWR) and the Ministry of Planning (MoP) and civil society organizations at national and governorate levels • Implementing agencies of the United Nations' RRP (including FAO staff) • Food Security and Agriculture and Livelihoods Cluster partners
Implementing partners:	<ul style="list-style-type: none"> • Government of Iraq (i.e. MoA, MoHE, MoWR and MoP) • International Organization for Migration, United Nations Development Programme and World Food Programme • Secretariats of the Food Security and Agriculture and Livelihoods Clusters • National and international non-governmental organizations
Duration:	24 months (including monitoring and evaluation)
Cost estimate:	USD 300 000
SDG indicators:	2.1.2 (Prevalence of moderate and severe food insecurity in the population); and 2.3.2 (Average income of small-scale food producers by sex and indigenous status)
FAO corporate indicators:	5.3.1 Capacities of government, communities and other key stakeholder strengthened to implement prevention and mitigation good practices to reduce the impacts of threats and crises
FAO Regional Initiative:	Building resilience for food security and nutrition in the Near East and North Africa

Key intervention area 3.2.

Title:	Support to an improved understanding of food security and nutrition and stakeholder capacities to conduct and analyse socio-economic and biophysical assessments
Relevance:	<p>Years of conflict, mass displacement and destruction of public and private property in the affected governorates has greatly affected the knowledge of the current state of food and agriculture. As a starter, a new evidence-base needs to be built up to inform programming.</p> <p>In addition to short-term humanitarian relief and livelihood protection assistance, medium-term integrated livelihood rehabilitation programmes are necessary to sustain vulnerable farming families in order to increase household food production and income, which ultimately promotes community stabilization and allows for more returns of internally displaced people to their respective areas of origin.</p> <p>It is crucial to initiate processes that aim at gathering, analysing and disseminating information on livelihood and natural resources conditions and profiles of the affected populations to inform sustainable livelihood rehabilitation programmes that can show immediate improvements and build people's resilience over time. A better knowledge base helps targeting of beneficiaries, as well as prioritization of response actions for vulnerable and impoverished rural and peri-urban populations and the agriculture sector.</p> <p>The information required can be divided into two separate but closely inter-related components: (i) socio-economic and (ii) biophysical. The first covers a wide-array of assessments and baseline surveys examining the food security and poverty situation at macro (e.g. sectoral, fiscal/social safety net policies), meso (e.g. markets and value chains) and micro (household/individual status and needs) levels. Biophysical information relates to the status of natural resources/environment (i.e. mainly land and water), and the need to assess the damage caused by mismanagement over time and destruction caused by conflict in recent years, combined with effects of climate change and reduced water inflows from neighbouring countries. This provides important answers to the prioritization of areas that can be selected for agricultural recovery and residence programming.</p> <p>Together, these inter-related components ensure that proposed interventions do not only concern themselves with rebuilding of the old, but help prepare the agriculture sector for the challenges of this age.</p> <p>The information requirements/assessment results will be closely coordinated/shared with the United Nations' RRP Secretariat and humanitarian cluster system sectors, including Food Security and Agriculture, Nutrition and Livelihoods and relevant government ministries and the Central Statistics Office.</p>

Objective:	To improve quality and timely socio-economic and biophysical information generated, stored and disseminated to inform agricultural investment planning, resilience programming and SDG monitoring
Outcome:	Quality and timely information produced, managed and used for improved agricultural programming and monitoring of the food security and natural resources situation in Iraq
Outputs and key activities:	<p>1. The knowledge base on food security and nutrition strengthened by assessing/monitoring the food security and nutrition situation in the retaken governorates and to identify pockets of food insecurity and malnutrition with linkages to evidence-based agricultural programming.</p> <ul style="list-style-type: none"> • Introduce, develop and implement a food security situation and response analysis framework to promote and facilitate transparent and evidence-based decision-making at the sectoral level. • Analyse, better understand and disseminate information on the key drivers of food insecurity, vulnerability and resilience (including constraints faced by returnees and remainees such as access to land and property). • Strengthen the capacity of food security-oriented state actors (e.g. relevant and academic institutions) in the use of survey instruments and tools, statistical analysis and geospatial analysis, including the training of 50 managers and technicians in data collection, analysis and field verification and producing and approving reports/maps showing geospatial analysis. • Incorporate the use of socio-economic assessment instruments and tools (particularly across the five retaken governorates) such as: early warning on agricultural production and food security (price) shocks; damage and loss needs assessments; food security and livelihoods assessments; and market and value chain assessments and monitoring reports. • Support the development of a national food security policy that reflects the current situation across the five retaken governorates (the “bread basket” of Iraq). <p>2. Monitoring of natural resources (using modern remote sensing techniques) incorporated under the national Food Security and Nutrition Information System</p> <ul style="list-style-type: none"> • Incorporate the use of biophysical assessment instruments and tools such as: agricultural cropping intensity mapping and change analysis; normalized difference vegetation index and agricultural stress index. • Support land cover mapping and land cover change analysis across Iraq, with emphasis on the five retaken governorates. • Support damage assessments of all land and water-related infrastructure relevant to farming areas of Iraq, with emphasis on the five retaken governorates.

	<ul style="list-style-type: none"> • Support the development of strategies and plans that promote community-based natural resource management.
Target areas:	Whole of Iraq, with special emphasis on Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Target beneficiaries:	<ul style="list-style-type: none"> • 50 policy/decision-makers, directors/managers and technicians of the Ministry of Agriculture (MoA), the Ministry of Health and Environment (MoHE), the Ministry of Water Resources (MoWR) and the Ministry of Planning (MoP) and the Central Statistics Office at national and governorate levels • Implementing agencies of the United Nations' RRP • Food Security and Agriculture and Livelihoods Cluster partners
Implementing partners:	<ul style="list-style-type: none"> • Government of Iraq (i.e. MoA, MoHE, MoWR and MoP) • International Organization for Migration, United Nations Development Programme and World Food Programme • Secretariats of the Food Security and Agriculture and Livelihoods Clusters • National and international non-governmental organizations
Duration:	24 months
Cost estimate:	USD 900 000
SDG indicators:	2.1.1 (Prevalence of undernourishment); 2.1.2 (Prevalence of moderate and severe food insecurity in the population); 2.4.1 (Proportion of agricultural land under productive and sustainable agriculture); and 15.3.1 (Percentage of land that is degraded over total area)
FAO corporate indicators:	1.4.2 (Number of organizations that have strengthened capacities for human resource and organizational development in the food security and nutrition domain as a result of FAO support) and 2.4.2 (Number of institutions that received capacity development support from FAO to collect, analyse and report data for decision-making that fosters sustainable production, address climate change and environmental degradation, including relevant SDGs)
FAO Regional Initiative:	Building resilience for food security and nutrition in the Near East and North Africa

Key intervention area 3.3.

Title:	Support to a well-coordinated and networked food security, nutrition and natural resources information system to assess and monitor the situation in the retaken governorates
Relevance:	<p>The United Nations' Recovery and Resilience Programme (RRP) is an important programme aiming to support the return of internally displaced people to their respective areas of origin and help remainee households alike to help re-establish their lives and livelihoods. The destruction by the Islamic State of Iraq and the Levant (ISIL) has left millions of households vulnerable with little savings and few household and productive assets. The wide destruction of public infrastructure, homes and household and productive assets makes a return to the pre-ISIL situation difficult. Needs assessments and situation reports are crucial for evidence-based programming but, for efficiency purposes, these need to be undertaken in a networked and coordinated manner to allow for the establishment of a new time series of information and comprehensive analysis, linking both socio-economic and biophysical information.</p> <p>Coordination with other RRP sub-programmes such as IOM's Community Stabilization Sub-programme is essential to provide targeted and efficient support to the areas and people most in need. This requires coordination between the Government of Iraq, United Nations and implementing agencies on the ground, in addition to joint monitoring of ongoing and planned projects, and documenting success stories that can be scaled up.</p> <p>This requires a networked approach to data information management by different stakeholders with a prominent role for the country's mandated custodian of surveys and statistical information, the Central Statistics Office in Iraq. FAO and the World Food Programme (WFP) as co-chairs of the Food Security and Agriculture Cluster will support the strengthening of an information management system under the RRP with the Central Statistics Office. By the end of the RRP's two-years timeframe, the system is expected to be fully operational and will then be extended to the whole country. While this will allow for informed decision-making for the RRP, it will also help with creating regular updates on the food security situation, monitoring and evaluation of interventions at the programme level and monitoring the SDGs.</p> <p>As food security is multi-faceted, covering several pillars including availability, accessibility, utilization and stability, and support to rural and peri-urban livelihoods is closely related, a large number of stakeholders will be requested to contribute. Harmonization of definitions and survey methods and analytical instruments and tools will be promoted to allow for overlaying and comparing various data sets.</p>

	The proposed coordination mechanisms will be conducted in close collaboration with the National Food Security Committee, an Inter-ministerial Working Group tasked with promoting food security for all in the country and established Humanitarian Cluster Secretariats and partners in the food security and nutrition and livelihoods sectors.
Objective:	To strengthen the national Food Security and Nutrition Information System (FSNIS) among key stakeholders using a networked and coordinated approach for data collection, storage and exchange, information analysis and use by the Government of Iraq, United Nations and their humanitarian and development partners.
Outcome:	A networked national FSNIS functioning efficiently with easy access to data and information supporting evidence-based programming and monitoring and evaluation.
Outputs and key activities:	<p>1. Improved coordination among key stakeholders of the food security and nutrition and livelihoods sectors in the area of data collection, analysis and storage</p> <ul style="list-style-type: none"> • Undertake an institutional review of the national FSNIS and assess stakeholder capacities in Iraq and the five retaken governorates in particular. • Verify the review/assessment and conduct three strategic planning workshops with key government, non-governmental and United Nations stakeholders at national and governorate levels. • Establish and support a small “Food Security Information Technical Secretariat” hosted by the Ministry of Planning (MoP) and co-chaired by the Ministry of Agriculture (MoA) with support from FAO and WFP and technical specialists from the Humanitarian Food Security and Agriculture and Livelihood Clusters. • Establish and promulgate data exchange protocols for the national FSNIS. • Collect/store relevant data/information on a common information platform where part of data may still be proprietary: (i) food security analysis, and interventions; (ii) crop monitoring and production estimations; (iii) food and agricultural market information systems (including prices); and (iv) natural resources information systems. <p>2. Improved coordination among key stakeholders of the food security and livelihoods sectors in the area of data exchange and information analysis, dissemination and use</p> <ul style="list-style-type: none"> • Facilitate the efficient sharing data and information to members and partners of the national FSNIS for in-depth research. • Promote the adoption of standardized approaches, methodologies, instruments and tools, indicators, etc. that will accommodate comprehensive analysis of food security and nutrition and natural resources

	<p>using different data sets, allowing for full geographic coverage and analysis across time series.</p> <ul style="list-style-type: none"> • Provide training to 50 members and partners on the information management cycle, starting with data collection, information management and analysis to visualization and dissemination. • Support response analysis, linking evidence-base to agricultural programming and strategy development in support of the United Nations' RRP.
Target areas:	Whole of Iraq, with special emphasis on Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Target beneficiaries:	<ul style="list-style-type: none"> • Managers, coordinators and technical staff from members of the Food Security and Agriculture Cluster, including United Nations agencies and international non-governmental organizations (NGOs) • Directors and technical staff of the MoA and Ministry of Water Resources (MoWR). • Managers, coordinators and technical staff of national NGOs. • Lecturers and research students of relevant universities and colleges. • Representatives of community-based organizations supported by FAO's sub-programme interventions.
Implementing partners:	<ul style="list-style-type: none"> • Government of Iraq (i.e. MoP, MoA, MoWR and the Ministry of Health and Environment) • International Organization for Migration, United Nations Development Programme and WFP • Secretariats of the Food Security and Agriculture and Livelihoods Clusters • International non-governmental organizations • Private sector organizations (e.g. chambers of commerce and commodity boards) • Civil society organizations
Duration:	24 months
Cost estimate:	USD 450 000
SDG indicators:	2.1.1 (Prevalence of undernourishment); 2.1.2 (Prevalence of moderate and severe food insecurity in the population); 2.4.1 (Proportion of agricultural land under productive and sustainable agriculture); and 15.3.1 (Percentage of land that is degraded over total area)
FAO corporate indicators:	1.4.2 (Number of organizations that have strengthened capacities for human resource and organizational development in the food security and nutrition domain as a result of FAO support) and 2.4.2 (Number of institutions that received capacity development support from FAO to collect, analyse and report data for decision-making that fosters sustainable production, address climate change and environmental degradation, including relevant SDGs)
FAO Regional Initiative:	Building resilience for food security and nutrition in the Near East and North Africa

Key intervention area 3.4.

Title:	Support to the recovery and upgrading of plant pest and disease surveillance and control systems
Relevance:	<p>The protracted and complex humanitarian crisis has eroded livelihoods and increased the vulnerability to food insecurity and poverty of the majority of the rural population from the five retaken governorates, especially due to inadequate agricultural support services. Agricultural production has been severely affected by lack of plant pest and disease control, which has been totally disrupted due to destroyed or damaged diagnostic facilities (e.g. laboratories), a lack of equipment, transportation and materials and the absence of qualified personnel. Disruption of services has caused some concern regarding increased outbreaks. Across the whole of Iraq, the resumption of these vital services is indispensable given the emerging outbreaks of disease and pests, e.g. red palm weevil (in 2016) and sunn pest (in 2017). This problem will require immediate investment in relevant agricultural infrastructure and service delivery.</p> <p>There is also a threat of transboundary plant pests and diseases breaking out in neighbouring countries and spreading across the region due to the collapse of plant protection and quarantine inspection services in those countries. There has been increasing informal trade (smuggling) of food and agricultural commodities across borders with the Syrian Arab Republic following that country's protracted crisis, which has increased the risk and threat of transboundary plant diseases and pests in Iraq.</p> <p>The interruption of pest and disease surveillance, diagnosis and control across the retaken governorates and the lack of inspection and quarantine at border crossings points – combined with low-input/low technology farming practices – has led to widespread outbreaks of pests and diseases, which have become a severe threat to crops, especially: (i) sunn pest (<i>Eurygaster integriceps</i>) which poses a critical threat to wheat production ("bread baskets") in Ninewa Governorate and the highland areas of the Kurdistan Region with yield losses of 90 percent in wheat and 20 to 30 percent in barley; (ii) red palm weevil (<i>Rhynchophorus ferrugineus</i>) poses a threat in Anbar Governorate and southern Iraq more generally; and (iii) insects and diseases that affect citrus, especially in Salah al-Din and Diyala governorates.</p> <p>Following the destruction of infrastructure there is a great need to restore and upgrade plant protection services in not only the retaken governorates, but all of Iraq, especially border areas. The key intervention area (KIA) seeks to support and make available surveillance, diagnostic and early warning system information to support the control of plant pests and diseases. It is in line with FAO's mandate of providing essential inputs to promote "integrated pest management (IPM)" practices through farmer field schools (FFSs). IPM is an</p>

	ecosystem approach to crop production and protection that combines different management strategies and practices to grow healthy crops and minimize the use of pesticides. IPM involves the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment.
Objective:	To reduce the risk of the international movement of plant pests and diseases whose introduction and spread could threaten crop production, food security and nutrition, food safety and health and the environment of Iraq
Outcome:	Iraqi plant pest and disease surveillance and control systems improved
Outputs and key activities:	<p>1. Plant health inspection services across five retaken governorates rehabilitated, upgraded and operational</p> <ul style="list-style-type: none"> • Conduct a rapid assessment on losses and damage to the agricultural infrastructure of border inspection control posts in Ninewa and Anbar governorates and diagnostic laboratories and extension centres at the Agricultural Directorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates); and prepare a “plant health facilities’ restoration plan”. • Repair or re-build and re-equip 12 of the aforementioned control posts, diagnostic laboratories and extension centres to international standards – according to the “plant health facilities’ restoration plan”. • Provide cash assistance to the poorest rural and peri-urban households engaged in cash-for-work (CFW) activities for unskilled construction works. • Train 85 laboratory technicians, data analysts, plant health inspectors, quarantine officers, plant protection officers, etc. to improve survey, inspection, control and decision-making practices according to international best practice (through the training of trainers). <p>2. An operational surveillance and early warning system established in Anbar and Ninewa governorates and linked to the national early warning system</p> <ul style="list-style-type: none"> • Conduct stakeholder analyses and organise multi-stakeholder consultations and agree on a joint approach and key priorities for an effective plant pests and diseases surveillance and early warning system. • Develop a communication and advocacy strategy and establish a coordination unit that oversees simple information management and circular communication flows for the monitoring and reporting of plant pests and diseases from the field upwards and back, including electronic data collection forms and digitized reporting formats. • Train 100 lead farmers (as “field scouts”), data analysts and information managers and provide essential traps, tools, instruments and materials needed for the early detection, identification and reporting of plant pests and diseases at the field, sub-district and district levels. • Conduct a consultation to evaluate the KIA, identify lessons learned and develop recommendations for sustaining support for inspection posts and a surveillance system with clear linkages to a national approach and framework.

	<p>3. A national “strategic plant pest and disease control programme” developed</p> <ul style="list-style-type: none"> • Review current plant pest and disease control strategies operating in Iraq and design a national strategic plant pest and disease surveillance, early warning and control programme applicable to the current risk and threat levels found in Iraq (with linkages to FAO’s regional and global networks, e.g. Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases). • Provide four fully equipped mobile diagnostic laboratories in high-risk areas, i.e. two for Anbar Governorate (in Al-Waleed and Traybeel Districts), one for Ninewa Governorate (Rabiyah Sub-district) and one yet to be specified district for Salah al-Din Governorate, for surveillance and situation analysis in the target locations. • Design, implement and monitor FFS programmes across the country for the promotion of IPM practices, particularly across the five retaken governorates
Target areas:	All of Iraq (with a focus on the retaken governorates of Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din and their borders with Iran, Jordan, Saudi Arabia and the Syrian Arab Republic.
Target beneficiaries:	<ul style="list-style-type: none"> • 85 government decision-makers, plant health inspectors, quarantine officers, plant pathologists, plant protection officers, laboratory technicians, data analysts, agricultural extensionists, etc. • 100 lead farmers/field scouts
Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture • Directorate of Agriculture in Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates
Duration:	24 months
Cost estimate:	USD 7 000 000
SDG indicator:	12.3.1 (Global food loss index)
FAO corporate indicators:	2.1.2 (Number of institutions (extension services, producer organizations, government institutions, relevant civil society organizations, research and education institutions) that received organizational or technical capacity development support to promote the adoption of integrated and cross-sectoral practices); and 5.2.1 (Number of countries that have improved threat monitoring mechanisms/systems to enhance the delivery of early warnings as a result of FAO support)
FAO Regional Initiative:	Small-scale family farming in the Near East and North Africa

Key intervention area 3.5.

Title:	Support to the recovery and upgrading of transboundary animal disease surveillance and control systems
Relevance:	<p>Livestock are important for the social and economic fabric of rural areas in Iraq. In 2009 the livestock population of Iraq was estimated at 2.55 million cattle, 7.72 million sheep, 1.47 million goats, and 0.29 million buffaloes (Central Statistics Office and FAO). These numbers clearly demonstrate the economic importance of livestock to the agriculture sector, as well as the great potential for providing employment opportunities in the productive and associated sectors. Increased productivity of livestock would improve the incomes of farmers, pastoralists and agro-industry workers, and reduce rural and peri-urban poverty levels. In addition, providing supplies to meet food needs, such as meat, milk and dairy products, which are rich sources of protein and essential amino acids, would ensure the food security and nutrition of vulnerable rural and peri-urban communities.</p> <p>Prior to the ISIL conflict, Ninewa and Dohuk governorates, in particular, were home to 1.25 million sheep and 150 000 goats. The livestock-keeping Bedouins from these border areas used to move their sheep and goats to Jordan and the Syrian Arab Republic (“Badia Rangelands”) during the winter season and move them back to Iraq during the summer season. This (<i>Hema</i>) transhumance grazing system was disrupted due to the protracted crises in the Syrian Arab Republic and Anbar, Diyala, Kirkuk, Ninewa and Salah al-Din governorates. In addition, the veterinary services across the whole of central Iraq have ceased while the Syrian veterinary services (i.e. disease surveillance and diagnosis, and vaccination programmes) have collapsed over the past five years. Unvaccinated Syrian sheep and goats are now crossing into Iraq. Similarly control systems along the Iranian, Jordanian, Saudi Arabian and Turkish borders are weak. <i>Peste des petits ruminants</i>, foot and mouth disease, lumpy skin disease and brucellosis are the most concerning TADs in the country.</p> <p>Although major efforts have been made by the Government of Iraq to develop specific disease control strategies, too little attention has been given to improving animal health delivery at the community level in remote rangeland areas. Disease control is hampered by: low incomes; inaccessibility of veterinary services; lack of animal health skills, knowledge and interest in disease surveillance and reporting; and the absence of trained auxiliaries. The country’s field veterinary services are constrained by the lack of adequate human and logistic resources, especially in remote border areas. The lack of animal health services in marginal areas, as well as high animal feed prices, have seriously affected Iraqi livestock herders and many are now selling their animals at much-reduced prices.</p>

	<p>The key intervention area (KIA) therefore proposes, for the short term, a focus on: (i) the much-needed upgrading of disease surveillance and diagnostic capacity, veterinary quarantine facilities, and emergency vaccination campaigns against priority TADs, along with the capacity development of field veterinarians and community animal health workers (CAHWs) in high-risk areas; and (ii) FAO proposes a national TAD surveillance, monitoring, reporting, early warning and control system (especially targeting all border areas of the country) linked to FAO's regional TAD control initiatives.</p>
Objective:	To reduce the risk of international movement of animal diseases whose introduction and spread could threaten livestock production, food security and nutrition, food safety and health and the environment of Iraq
Outcome:	Iraqi transboundary animal disease (TAD) surveillance and control systems improved
Outputs and key activities:	<p>1. Animal health inspection services across Anbar and Ninewa governorates rehabilitated, upgraded and operational</p> <ul style="list-style-type: none"> • Conduct a rapid assessment on losses and damage to the agricultural infrastructure of border inspection control units, diagnostic laboratories and extension centres in Ninewa and Anbar governorates; and prepare an "animal health facilities' restoration plan". • Repair or re-build and re-equip the aforementioned inspection posts, diagnostic laboratories and extension centres to international standards – according to the "plant health facilities' restoration plan". • Provide cash assistance to the poorest rural and peri-urban households engaged in cash-for-work (CFW) activities for unskilled construction works. • Train 250 laboratory technicians, data analysts, animal health inspectors, quarantine officers, veterinarians, etc. to improve survey, inspection, control and decision-making practices according to international best practice (through the training of trainers). <p>2. An operational TAD surveillance and early warning system established in Anbar and Ninewa governorates and linked to the national early warning system</p> <ul style="list-style-type: none"> • Conduct stakeholder analyses and organise multi-stakeholder consultations and agree on a joint approach and key priorities for an effective TADs surveillance and early warning system. • Develop a communication and advocacy strategy and establish a coordination unit that oversees simple information management and circular communication flows for the monitoring and reporting of TADs from the field upwards and back, including electronic data collection forms and digitized reporting formats. • Train and equip 100 community animal health workers (CAHWs), data analysts and information managers and provide essential tools, instruments

	<p>and materials needed for the early detection, identification and reporting of TADs at the field, sub-district and district levels.</p> <ul style="list-style-type: none"> • Conduct a consultation to evaluate the KIA, identify lessons learned and develop recommendations for a sustaining support for inspection posts and surveillance system with clear linkages to a national approach and framework. <p>3. A national strategic TAD control programme developed</p> <ul style="list-style-type: none"> • Review current TAD control strategies operating in Iraq and design a national strategic TAD surveillance, early warning and control programme applicable to the current risk and threat levels found in Iraq (with linkages to FAO's regional and global networks, e.g. Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases). • Train 12 national and governorate-level decision-makers in strategy development and investment programming for the control of TAD in Iraq and the five retaken governorates. • Initiate the routine vaccination and tagging of animals against the high-risk TADs as part of enhancing and maintaining animal health and production. • Design, implement and monitor CAHW networks across the country for the monitoring, early detection and identification of TADs and promotion of improved animal husbandry (e.g. health, feed and biosecurity). • Develop contingency plans for controlling TADs and mobilize "rapid response" vaccination campaigns efficiently and effectively on the outbreak of TADs.
Target areas:	Pastoral and agropastoral areas of Ninewa Governorate (in particular Mosul District and Rabiya and Zummar sub-districts of Tel Afar District) and Anbar Governorate (in particular Fallujah, Ramadi, Al-Qaim, Al-Waleed and Traybeel Checkpoints)
Target beneficiaries:	<ul style="list-style-type: none"> • 300 government decision-makers, animal health inspectors, quarantine officers, epidemiologists, veterinarians, laboratory technicians, data analysts, livestock extensionists, etc. • 100 CAHWs
Implementing partners:	<ul style="list-style-type: none"> • Ministry of Agriculture • Directorates of Agriculture in Anbar and Ninewa governorates • Ministry of Health and Environment and Ministry of Trade and Industry • Iraqi Veterinary Medical Association
Duration:	24 months
Cost estimate:	USD 7 000 000
SDG indicator:	12.3.1 (Global food loss index)

FAO corporate indicators:	2.1.2 (Number of institutions (e.g. extension services, producer organizations, government institutions, relevant civil society organizations, research and education institutions) that received organizational or technical capacity development support to promote the adoption of integrated and cross-sectoral practices); and 5.2.1 (Number of countries that have improved threat monitoring mechanisms/systems to enhance the delivery of early warnings as a result of FAO support)
FAO Regional Initiative:	Building resilience for food security and nutrition in the Near East and North Africa

Saving livelihoods saves lives

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ISBN 978-92-5-130957-5



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CA1511EN/1/09.18