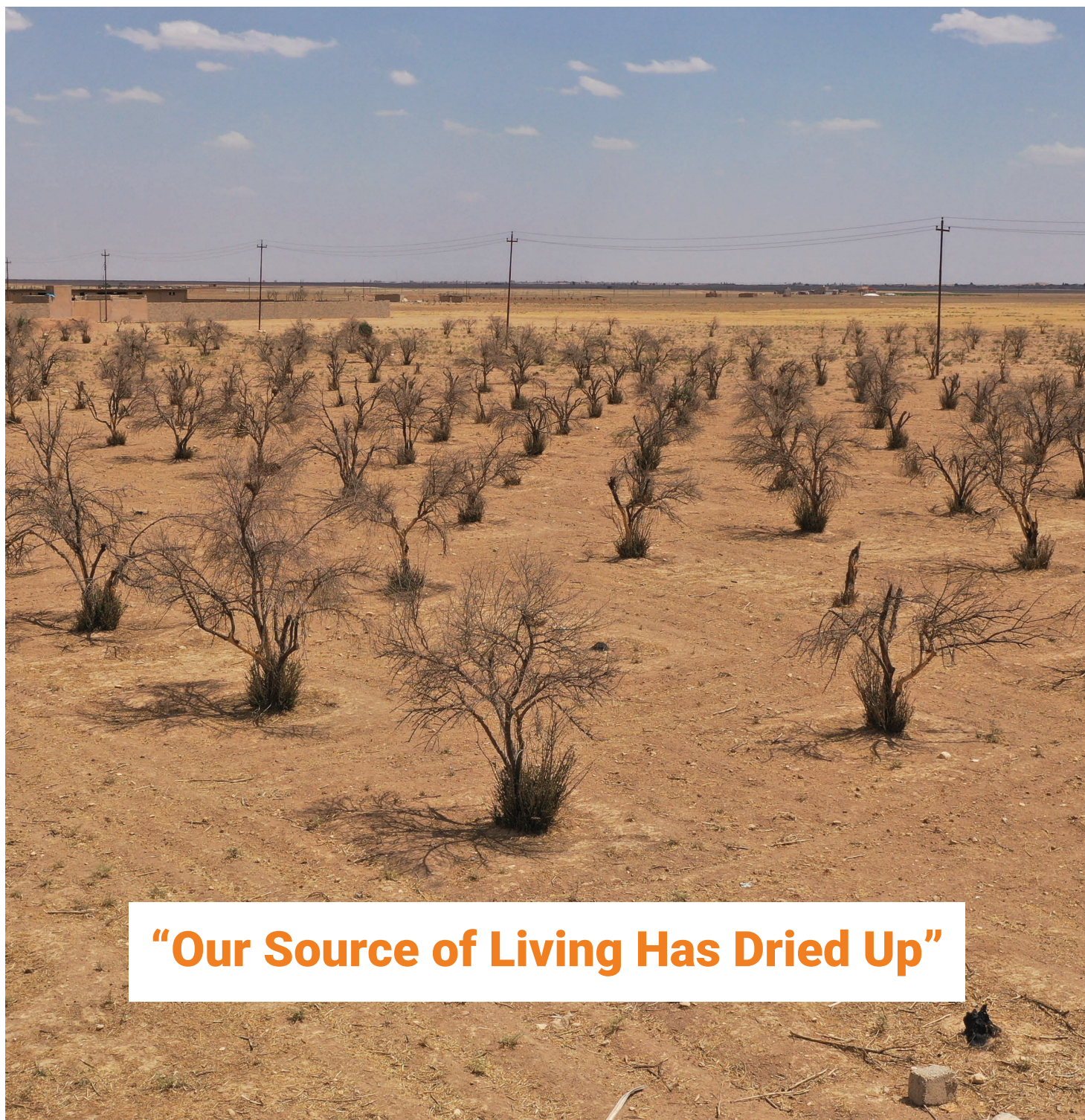


# Iraq's drought crisis and the damaging effects on communities



**“Our Source of Living Has Dried Up”**

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The **Norwegian Refugee Council (NRC)** is an independent humanitarian organisation helping people forced to flee. In crises across 31 countries, NRC provides emergency and long-term assistance to millions of people every year. NRC promotes and defends displaced people's rights locally, nationally and on the world stage. NORCAP, NRC's expert deployment capacity, helps improve international and local ability to prevent, prepare for, respond to and recover from crises. NRC also runs the Internal Displacement Monitoring Centre in Geneva, a global leader in reporting on and advocating for people displaced within their own countries.

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*Front Cover: A barren field of olive trees in Kuri Jami village in Sinjar, Iraq impacted by the drought and decreased rainfall.  
Photo:Fareed Baram/ NRC*

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# Introduction

## An unfolding disaster

Iraq is in the midst of a water scarcity crisis stemming from record low levels of rainfall, poor water resource management, and reductions in water flow into the Tigris and Euphrates rivers from upstream countries. Drought conditions in Iraq have been exacerbated by the threat of climate change, which has contributed to record low rainfall and increasing temperatures throughout the country. The drought has affected northern Iraq since early 2021, while governorates in the South have witnessed decreased water supply and quality for several years. Crop and livestock production have since plummeted, impacting vulnerable communities that have been affected by conflict and displacement over the last several years. At least seven million people in Iraq have been affected by the drought in recent times.<sup>1</sup>

Iraq has been identified as the fifth most vulnerable country globally to decreased water and food availability, extreme temperatures, and associated health problems.<sup>2</sup> While the drought has already had immediate devastating effects in 2021, increased and continued water scarcity exacerbated by climate change could reverberate to urban areas as a result of the displacement of farmers and temporary wage workers who have lost their means of income. Without targeted assistance and policy measures, the drought and climate impact will serve as another displacement driver and devastating blow on the lives of displaced persons, returnees, and vulnerable communities in Iraq.



*A farmer's destroyed tomato crop in Ninewa governorate, Iraq as a result of the drought in 2021. Photo: Fareed Baram/NRC*

# Methodology

In November 2021, the Norwegian Refugee Council (NRC) in Iraq conducted an assessment on the impact of the drought on agriculture production in the 2020-2021 cropping season. More than 2,800 households were surveyed across farming communities in Anbar, Basra, Duhok, Kirkuk, Ninewa, Salah Al-Din, and Thi Qar governorates, which includes approximately 300 IDPs and 1,500 returnees among respondents. An additional survey was conducted with 100 food vendors and livestock traders, as well as 48 key informant interviews with community stakeholders and authorities, namely mukhtars and employees of the Directorates of Agriculture and Departments of Irrigation.

The survey findings show the damaging impact of drought on farming communities in Iraq, with over a third (37 percent) of farmers reporting wheat crop failure and 30 percent experiencing barley crop failure.

The consequences of water shortages have been similarly devastating for livestock farmers. Up to 37 percent of households have lost cattle, sheep, or goats in the last six months due to insufficient water and livestock feed or diseases.

Furthermore, the average monthly income in six out of seven surveyed governorates dropped lower than the monthly Survival Minimum Expenditure Basket (SMEB) as a result of the losses in crop and livestock production and lack of work opportunities for daily laborers. As food prices have risen, one-fifth of households surveyed report there is never enough food for everyone in their family, while one in two respondents state that they are in need of food assistance.

Drought conditions have already impacted displacement as 7 percent of households have had a family member forced to migrate as a result of water scarcity conditions and its socioeconomic effects. Young people in particular are losing jobs or leaving home to look for economic opportunities elsewhere.

# Impact of drought in Iraq

## Crop losses and failure:

The record low levels of rainfall have resulted in detrimental losses in crop production and even crop failure throughout Iraq. The assessment shows 37 percent of farmers reported wheat crop losses of over 90 percent of the total expected harvest and 30 percent noted the same for barley. Only 14 percent of households reported no losses in wheat and 18 percent stated no losses in barley.

Households estimate the production of wheat has decreased by 84 percent in Kirkuk governorate and 78 percent in Ninewa governorate, which is known as the “breadbasket” of Iraq. Food availability could be impacted by the lack of wheat harvest, as well as an increase in prices to supplement the gap in local crop production through imports. Basra and Salah Al-Din are estimated to have witnessed a 75 percent decrease, while wheat production in KRI has declined to 55 percent. Wheat is the most important cash crop across every surveyed governorate, which will have a devastating impact on income for farmers, daily laborers, and export revenue to GDP.

Farming communities without access to irrigation water who rely on rain-fed agriculture have been among the most affected by the drought. Many households lack access to any irrigation infrastructure due to remote locations or the cost of equipment, which has left no alternative for water supply for crops in some locations. In Al-Qurna district in Basra, households have witnessed devastating losses not only in wheat, but also in fruits and vegetables as a result of the lack of irrigation infrastructure and decreased rainfall. In other areas, such as Sinjar and Baaj, farmers rely on the exploitation of brackish, unsuitable groundwater for crops, which has had a detrimental impact on wheat and barley production with 92 percent of households in Baaj reporting wheat crop failure and two-thirds in Sinjar reporting both wheat and barley failure. Over one-third in Sinjar have also suffered a 90 percent loss of their fruit and vegetable produce.

In Hawija in Kirkuk, while many households rely on rain-fed crops and lack access to irrigation networks, some farmers have irrigation infrastructure that has been damaged by the large-scale military operations from the conflict with IS, as is the case in other conflict-affected governorates, such as Ninewa, Salah al-Din, and Anbar. The situation in Hawija has deteriorated as a result with 69 percent of households witnessing wheat crop failure compared to 40 percent several months ago.

**Haji Hassa**, a Yazidi farmer from Kuri Jami village in Sinjar, showing how the drought ruined the vegetables at his farm. August 2021.



**“Because of the drought, we didn’t get anything this year, and there’s nothing I can do about it. The drought ruined our tomatoes, eggplants... this year, there is nothing. I didn’t sell even one kilo from this entire field. My family’s source of living has dried up.”**

## **Livestock losses:**

An immediate ramification of wheat and barley losses witnessed by low-income farmers is the inability to feed their livestock due to shortages and increasing prices of livestock feed. This has posed an immediate threat to cattle, sheep, and goats that are not receiving sufficient stock feed to survive.

In Hawija, nearly half of farmers reported cattle losses in the last six months as a result of lack of animal feed and diseases. In Al-Chibayish and Al-Faw, households have to bring in drinking water to keep their cattle alive as water levels have dropped and salination rates have risen. Half of households in these districts have lost cattle in the last six months. Furthermore, many farmers have been forced to sell their livestock at reduced prices. Farmers told NRC in Sinjar and Baaj that the average cost of a cow is around 800 USD, but prices may drop to an average of 200 USD once the condition of livestock deteriorates due to lack of stock feed.

## Income reduction:

With farmers experiencing detrimental crop losses, incomes have dropped for farming households. In Anbar, Basra, and Kirkuk, more than half of households rely on agriculture as their main source of income and revenues have plummeted. The average monthly income among surveyed households is 209,000 IQD in Kirkuk, 288,000 IQD in Basra, and 293,000 IQD in Anbar, which is significantly lower than the 440,000 IQD required to meet the monthly Survival Minimum Expenditure Basket (SMEB) for Iraq defined by the Cash Working Group of Iraq. The majority of farmers lease their land from the government, which effectively means they are paying rent while their crops continue to fail and they have no income.

### "Otherwise, there will be no more farming"

Samira\*, 46, is back in her hometown in Mosul, Ninewa, after years of displacement. She has returned to farming her land with two of her five children, but has already seen reductions in produce.

**"We mostly grow eggplant, okra and green pepper, but our production has decreased due to water shortage recently, which also led to a decrease in our income because the land is our only source of employment.**

**"We use gasoline water pumps to irrigate the land. Water shortage has touched everything in our life. Gasoline and food prices have gone up, and for farmers like us, this has made our lives very hard.**

Samira is not alone in this. She hears from other farmers that their income has gone down compared to past years. This makes food less affordable and the solutions more difficult. **"I can't afford the necessary food for my family, so I borrow money from my relatives or buy food on credit.**

**"I don't know what to do. I feel lost. I can't leave my land, it's my only source of income. I know some people from the village who had to leave for the city to work as daily workers in shops. I can't do that. Farming is the only thing I know how to do and I'm too old to be displaced [again]."**

Samira wants to see NGOs and the government working together **"to find a solution for us"** because, otherwise, **"we will all lose our land and there will be no more farming."**

\*Name changed to protect identity.

Additionally, as a result of the lack of crops to harvest, there has been a decrease in employment opportunities for daily workers. 80 percent of farmers did not have any temporary wage workers from 2020-2021 as a direct result of the drought and the decrease in crop production. For example, in Baaj 99 percent of farmers did not have daily workers. Ongoing drought conditions will continue to impact livelihood opportunities as the World Bank estimates that a 20 percent decrease in Iraq's water supply could decrease demand for agricultural labor to 11.8 percent and reduce GDP in Iraq by \$6.6 billion USD.<sup>3</sup> Notably,

more than a quarter of IDPs rely on daily work as their main source of income, particularly in Duhok, Kirkuk, Ninewa, and Salah Al-Din. The inability to access income will only further exacerbate existing vulnerabilities for displaced communities and contribute to more serious negative coping mechanisms or additional waves of displacement.

## Lack of food

81 percent of food vendors report the prices of key food commodities have increased since June 2021. The cost of wheat grain, wheat flour, and barley has risen the most significantly over the last year. The price of 50 kilograms of wheat flour increased from 41,100 IQD October 2020 to 50,000 IQD in November 2021, while bread prices have also risen as a result.<sup>4</sup> This has left the most vulnerable households struggling to afford basic necessities as 56 percent of those surveyed state that price increases have impacted the quantity and quality of food purchased. Nearly one-fifth of households reported there is never enough food for everyone in their family. Children are at particular risk with one in two children (48 percent) having their food intake slashed, and 43 percent not having enough water according to key informant interviews with local authorities.

Furthermore, the drought has had evident socioeconomic repercussions that impact food accessibility among Iraqi households. The declining monthly income for farmers and daily laborers has presented challenges in financially accessing food. Across all drought-affected governorates, households report difficulties obtaining food because of a lack of income and the spike in prices. In all governorates except Kirkuk governorate, the main difficulty in accessing food is the income to purchase it. Meanwhile, respondents in Hawija and Kirkuk districts both reported that the main difficulty is not enough quantity and types of food sold in markets, which could be attributed to increased import costs as a result of challenges around strictly controlled checkpoints, alongside low incomes to afford commodities.



Families shop for food items and groceries in Al-Nabi market in East Mosul, Iraq. Photo: Fareed Baram/ NRC





*The drought in Kuri Jami village,  
Sinjar. August 2021. Photo:  
Fareed Baram/ NRC*

## Displacement:

Drought conditions have begun to increase displacement throughout the country. 1 in 15 households interviewed by NRC noted that a family member had been forced to migrate in the last month as a result of the aftereffects of the drought. In particular, vulnerable groups have been prone to water scarcity triggered displacement in search of work, income, or the means to support their families.

There is a clear pattern of drought-instigated migration among young people aged between 15-24 years from farming communities to towns in cities in search of economic opportunities and jobs. Almost one in two (45 percent) people in key informant interviews report that youth throughout Iraq have been forced to leave home, while 38 percent say there was a loss of jobs among this group.

In addition, IDPs and returnees have comparatively been forced to migrate in response to the drought. Sixteen percent of IDPs in Duhok governorate had a family member migrate in the last thirty days as a result of inadequate water supply and its associated effects. In Hawija, a quarter of returnees have already had a family member forced to migrate as a result of the drought. Increased displacement is a possibility in the future, especially amidst concerns that the drought will worsen in 2022 and increase pressure on communities, particularly those that lack access to reliable services.



# **“I am moving out”**

At the time of the interview, Osama was packing his bags, ready to leave the town of his birth and, for a few more days, his job.

Osama and his brother have looked after the land of their parents growing corn and wheat. In recent years, they have seen how production has fallen back season after dry season.

**“Our harvest has dropped due to drought. Our land was thriving, but now, it is devastating to go through this; our land is losing its value day after day and no one seems to care about what farmers are facing. Our land used to produce 20 tonnes each season, now it’s no more than 10 or 11 tonnes.”**

The problem is complex, Osama says, and different tactics wouldn’t work. **“We have dug wells and installed sprinklers to irrigate the land, but that is not enough because there is also the electricity issue. How are the water pumps supposed to work without electricity?”**

With bad harvests came price hikes. **“Food prices have doubled. The price of a cooking oil bottle has gone up to 3000 IQD, it used to be 1500 IQD. We can barely buy the food that we need, we have been spending our savings to buy food.”**

A combination of drought and costly living is pushing Osama 70 kilometres away from his land.

**“I will be moving out of Hawija for Kirkuk city in three days. There is nothing to do in our rural areas. I have some experience in repairing furniture which is what I am planning to do for living. I will rent a house and when I am settled, I will bring my wife, too. “If the government does not find a solution, we will lose many agricultural lands not only in Kirkuk, but in all of Iraq. There must be alternatives and solutions for water shortages. There will be huge displacement if this continues.”**

# Negative coping mechanisms in response to the drought

The drought has had reverberating consequences from farming communities to laborers to households purchasing daily food commodities. Nearly three-quarters of households have been forced to buy food on credit or through borrowed money. More than half of all respondents have resorted to spending their savings to buy food in the last thirty days. Households in Basra have been hit particularly hard as 99 percent in Al-Faw and 77 percent in Al-Qurna have spent their own savings to buy food. Households forced to spend their savings for sufficient food items are less resilient to future, and potentially more extreme, shocks related to water scarcity and climate change. More than one-third of households have also sold property in order to purchase food, which could serve as an indicator for future displacement as individuals are forced to move to afford food for their families.

Radhwan, a 36-year-old from Mosul, recalled, **“Food prices have definitely increased. I am currently in debt to a number of food shops because I don’t always have enough money to pay for what my family needs because my income has significantly decreased. Sometimes when I need to buy a certain type of food, like vegetables or dairy products, I have to choose poor quality items or the ones that have nearly gone bad so that shop owners sell it at a lower price because I can’t afford the better-quality products.”**

The drought has exacerbated existing vulnerabilities among IDPs and returnees as these households continue to face significant levels of humanitarian need across access to services, shelter, and livelihood opportunities. The Multi-Cluster Needs Assessment (MCNA) found that more than three-quarters of IDP and returnee households reported they were unable to meet basic needs related to healthcare, food, education, or basic household expenditures between June and August 2021.<sup>5</sup> The socioeconomic aftereffects of the drought will only exacerbate these needs. NRC’s assessment found that IDP households were more likely to change their place of residence to reduce expenses in light of drought conditions. IDP children and youth were also more likely to drop out of school and work to provide resources for their families compared to returnee and host community households. Additional research from the WASH Cluster suggests that IDPs might be the most vulnerable to climate change with nearly three-quarters of IDPs living in high deficit precipitation zones.<sup>6</sup>

Returnee households have also faced great challenges accessing durable solutions that could strengthen their resilience in the midst of drought conditions. Half of Iraq’s five million returnees dwell in areas of medium to high severity and continue to face significant needs regarding shelter, livelihoods, and basic services related to their displacement.<sup>7</sup> 81 percent of returnee households surveyed have been forced to buy food on credit over the last month. Continued drought conditions could lead to exacerbated negative coping mechanisms among returnees, which could result in re-displacement if assistance around basic services and employment is not provided.

# Drought response and 2022 forecast

Immediate measures are needed to provide assistance to households for crop and livestock support, as well as in response to a loss of income and increasing food prices. This is particularly urgent considering both forecasting for the drought in 2022, as well as the recent decision by the Ministry of Agriculture to reduce the annual areas for cultivation by fifty percent for the 2021-2022 cropping season as a result of water scarcity. The available water in dams and reservoirs can only irrigate approximately 250,000 hectares of land, which falls drastically short compared to the more than three million hectares of irrigable land prior to the conflict. It is also expected that with drier conditions continuing in 2022, surface water storage will decrease, salination levels will increase, and shallower wells will dry for the coming farming season, leading to further crop losses and failure. Incomes for both farmers and daily workers are likely to continue to decline, alongside a rise in food prices and increased import requirements for wheat as a result of the low domestic production. Households will also be affected with regards to increased reliance on purchased water, as well as poor hygiene practices that could lead to disease outbreaks. Further displacement of households as a result of continued drought conditions is likely in highly impacted areas, such as Ninewa and central and southern Iraq, namely in Basra, Thi Qar, and Al-Muthanna governorates.

**The need for rehabilitated irrigation systems, drought tolerant seeds, and food assistance was echoed as the top three forms of assistance for households across all governorates.** More than half of households stated that the main difficulties for crop production is the need to rehabilitate irrigation systems and improve access to agricultural tools. In Basra, Kirkuk, and Thi Qar, water trucking and drilling water wells were listed as critical measures needed for crop production and livestock. Animal feed support and veterinary services are also immediately needed to halt the loss and sales of cattle, goats, and sheep. Lastly, in areas with a high proportion of daily workers who have lost employment, the majority have prioritized food assistance as the most significant aspect of the drought response.

NRC Iraq has been committed to providing drought mitigation programming throughout 2021 to **vulnerable** communities that have been impacted by decreased water supply. NRC teams have distributed **cash-based assistance** to buy animal feed to more than **200** vulnerable livestock keepers in Sinjar and Baaj in Ninewa governorate to ensure livestock receive sufficient food and to prevent forced livestock sales. NRC has also provided **drought tolerant seed varieties** to smallholder wheat producers in Hawija, Sinjar, Baaj, and Hammam al-Alil. NRC supported **1,019** households in Hawija, **735** households in Ninewa, and **257** households in Ramadi with **drought-tolerant wheat seeds** to ameliorate crop losses and crop failure amidst ongoing drought conditions.

*Drought conditions have had devastating effects on Swejen village in Baaj and its surrounding agricultural fields. Photo: Fareed Baram/ NRC*

# Key recommendations

NRC welcomes the dedicated engagement, dialogue, and efforts by the Government of Iraq, the Kurdistan Regional Government, and international stakeholders to ensure that the impacts of climate change and water scarcity are discussed with regional stakeholders; international water sharing agreements are upheld; and mitigation efforts are prioritized by all parties alike. The below recommendations aim to ensure households are not adversely impacted by the effects of climate change in the immediate and long term and that communities are resilient and able to continue with existing livelihoods.

## Donor Governments and International Financial Institutions:

- **Provide immediate support to livestock farmers to buy livestock feed and veterinary supplies** over the next three months until the next season when pasture will be available so that farmers are not forced to sell their livestock and/or prevent them from dying.
- **Provide drought tolerant seeds to farmers with wheat and barley crops in order to reduce crop failure or major crop losses** in the event of continued drought conditions in 2022. Ensure the proper training and agricultural tools are provided to farmers to adapt to new seeds and processes.
- **Provide cash assistance to the most vulnerable IDPs and returnees, who in many cases rely on daily work in farms that are currently not hiring because of the drought situation**, based on clear vulnerability criteria to supplement their lack of income.
- **Invest in rehabilitating irrigation infrastructure and/or providing infrastructure where it does not currently exist among affected smallholder farmers. Provide associated technical training and relevant agricultural tools** to ensure they can better prepare for the upcoming season.
- **Support targeted assistance to districts and governorates based on evidence of their primary needs related to drought and water scarcity.** For example, invest in alternative water supply options, such as rainwater harvesting techniques for crops and livestock.
- **Provide capacity building, guidance and financing to district, governorate, and ministerial water resource departments** to increase the ability of government authorities to manage water resources governance in Iraq.
- **Support the Government of Iraq in ensuring transboundary water sharing agreements are adhered to by upstream riparian countries**, such as in upholding the Memorandum of Understanding signed with Turkey to ensure healthy water flow into Iraq.
- **Prioritize a holistic approach in responding to the impact of drought conditions, such as in considering the impact on children and youth** and how to prevent school dropouts and child labor and improve opportunities for youth.

## Government of Iraq and Kurdistan Regional Government:

- **Develop local level plans, in consultation with smallholder farmers** and those most affected by the drought, that support farming households through drought conditions.
- **Establish effective and implementable water resource management plans and service delivery** through increased financing and improved private sector participation.
- **Incorporate climate-mitigation strategies within national job creation initiatives** to support climate resilient communities and minimize the negative effects of continued drought conditions and climate change.
- **Advocate for transboundary water sharing agreements to be adhered to by upstream riparian countries** with support from the international community.
- **Establish an early warning system for climate and water resources shocks** to be communicated to vulnerable populations and those most at risk.

# Endnotes:

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