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MODULE 2

FLOODS



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About This Module

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Floods are the most common disaster type covered by this training, and the one most RISE partner countries have already lived through in some form, whether from rivers, flash flooding after heavy rain, or coastal storm surge.

It follows the same four phases as every hazard module in this training: understanding the risk, preparedness, during the disaster, and after the disaster.

This module is built around Spain's experience, since Spain leads its development, but flooding is a Europe-wide risk. The case studies draw on five countries — Spain, Türkiye, Italy, Ireland and Germany/Belgium —

Learning Outcomes

By the end of this module, you will have learned:



- Tell river, flash and coastal floods apart, and know which applies to your home
- Read an official flood warning and know where to check one
- Prepare a household plan, a pet plan and a 72-hour kit
- Take the right action during a flood, at home and in your community
- Commit to one household action and one community action



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01

Understanding the Risk

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Types of Floods

01

○ River Floods

Build over hours or days as water levels rise upstream, usually giving more warning time. A river can flood far from where the rain fell.

02

○ Flash Floods

Develop in a matter of hours, sometimes minutes, when rainfall exceeds what the ground and drains can absorb — the most dangerous, because of how little time they leave.

03

○ Coastal Floods

Come from storm surge and high tides, often combined with heavy rain, and are becoming more frequent with sea-level rise.

Spain

Valencia, 29 October 2024

- Caused by a DANA: cold air isolated aloft collides with warm, moist air near the ground, producing intense, slow-moving storms
- More than 400mm of rain fell in eight hours — roughly a year's worth for the region — affecting more than 75 municipalities
- The Valencian coastal plain has a long history of this kind of flooding, locally called a gota fría, including major floods in 1957, 2007, 2013 and 2019

“237 deaths - the deadliest natural disaster in modern Spanish history”

Spain

Valencia, 29 October 2024

- Regional flood-risk mapping had already marked the worst-hit ravines as unsuitable for construction
- Homes, industrial estates and a shopping centre were built there regardless; about 15,000 people were displaced and damages exceeded €10 billion

Lesson: a known, mapped risk still needs someone to act on the map.

“237 deaths - the deadliest natural disaster in modern Spanish history”

Türkiye

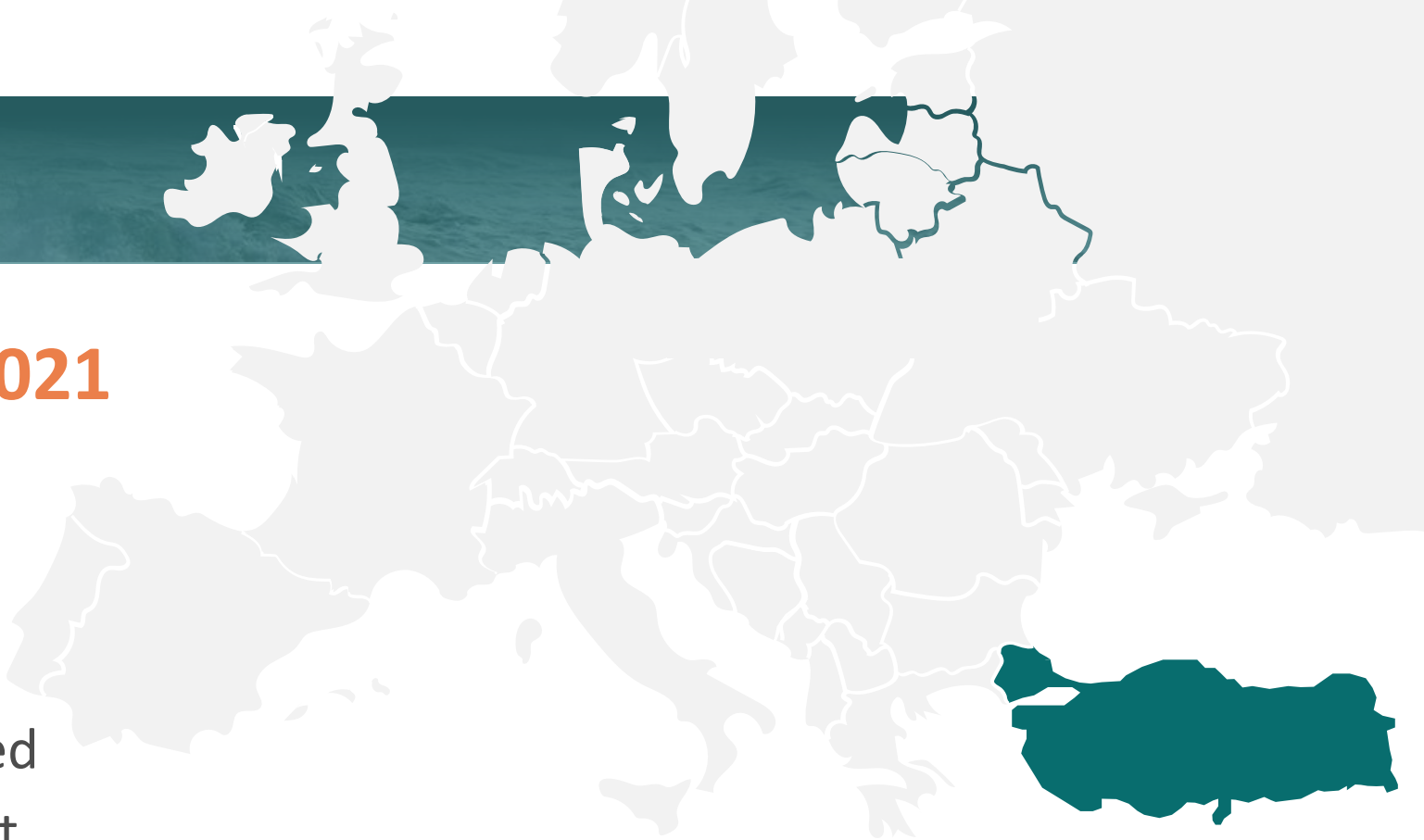


Kastamonu, 11 August 2021

- Rainfall of a kind hydrologists expect roughly once a century hit a narrow mountain valley
- Steep, bare slopes couldn't absorb the water, which funnelled into swelling streams
- In Bozkurt, the Ezine river became a wall of water, mud and debris, sweeping away cars and collapsing buildings

“81 deaths in a flash flood across three provinces”

Türkiye



Kastamonu, 11 August 2021

- At least 81 deaths across Kastamonu, Sinop and Bartın provinces, and hundreds of buildings destroyed or damaged
- Riverbank construction had left the water nowhere to go

Lesson: in a narrow valley, warning time is minutes, not hours — prevention has to happen before the rain starts.

“81 deaths in a flash flood across three provinces”

Italy

Emilia-Romagna, May 2023

- The first wave, in early May, saturated the ground
- The second, on 16–17 May, dropped an extraordinary volume of water in 36 hours onto ground that could no longer absorb it
- More than 400 landslides were recorded across the region

“23 rivers overflowed at once across two waves of flooding, three weeks apart”

Italy

Emilia-Romagna, May 2023

- 17 deaths across the two events; more than 36,000 people evacuated
- What disaster planners call a 'compound event': no single cause, but several ordinary risks arriving together

Lesson: preparedness can't plan for one hazard in isolation.

"23 rivers overflowed at once across two waves of flooding, three weeks apart"

Ireland

Youghal, County Cork, Ongoing

- Not a single sudden event, but a slow, chronic one: rising sea levels and increasingly frequent storm surges
- ‘Pathways: Building Community Climate Resilience’ brought residents together from 2023 onward
- Includes nature-based measures: restoring wetlands and dunes that act as natural buffers

“600+ residents helped build the town's first community-led flood response plan”

Ireland

Youghal, County Cork, Ongoing

- Rather than asking whether flooding will happen, the town planned for when

Lesson: a community doesn't need a disaster to start organising — awareness on its own is not a plan.

“600+ residents helped build the town's first community-led flood response plan”

Germany/Belgium

Ahr Valley, July 2021

- Extreme rainfall over western Germany and eastern Belgium caused catastrophic flash flooding
- 196 deaths in Germany, 39 in Belgium — 243 in total
- 134 deaths in the Ahr valley alone, many after warnings were issued too late or not acted on

“243 deaths - one of the costliest disasters in modern German history”

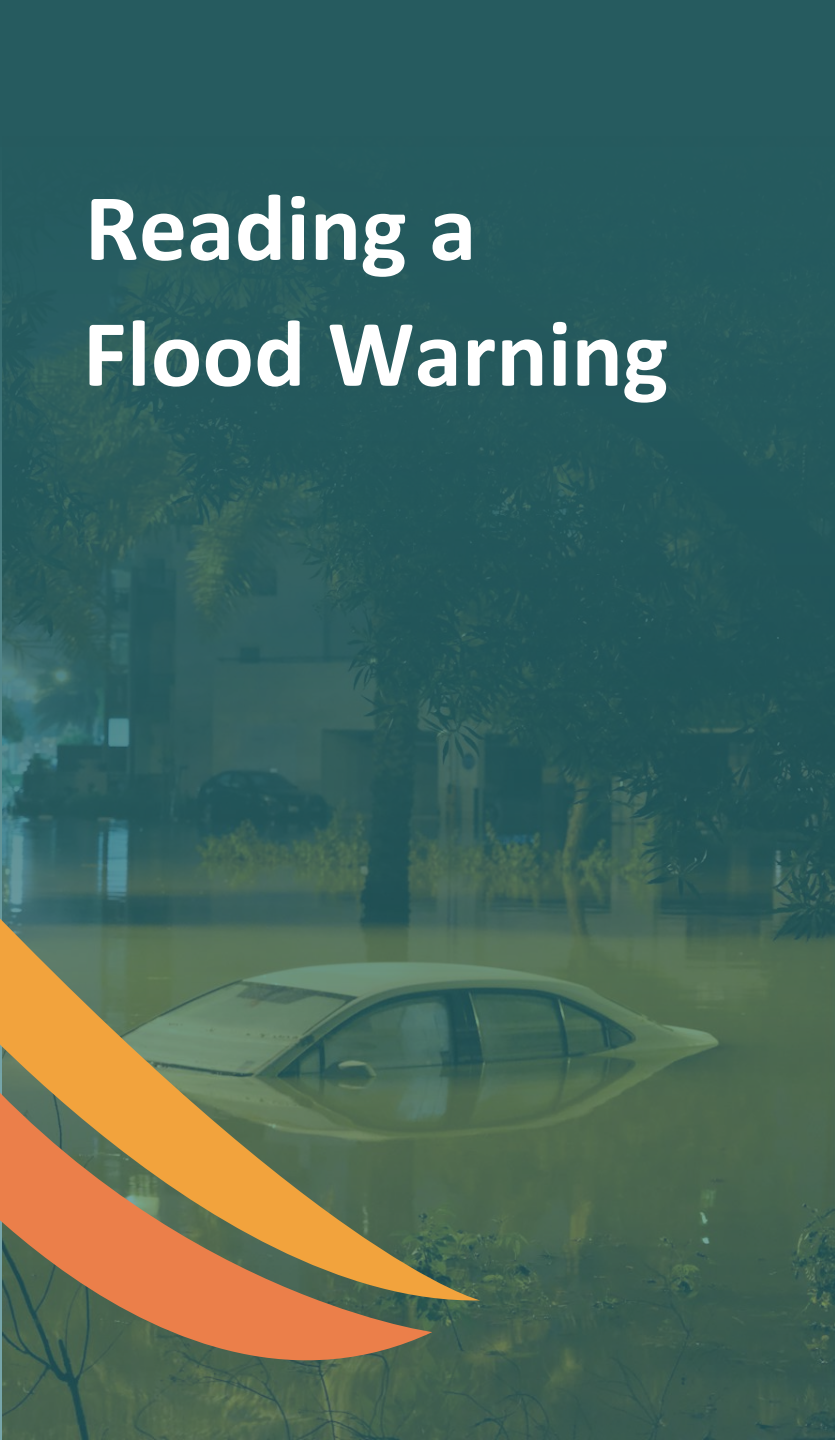
Germany/Belgium

Ahr Valley, July 2021

- Became the costliest natural disaster in modern German history

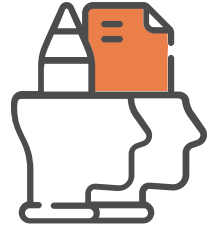
Lesson: even a well-resourced country can be caught without an effective local warning system.

“243 deaths - one of the costliest disasters in modern German history”



Reading a Flood Warning

- **Spain's system:** four colour levels — no risk, attention, preparation, immediate action. Useful, but it's Spain's own system.
- **The rule everywhere:** every RISE country has its own scale. Know your national levels before a flood happens, not during one.



Exercise: Check Your Flood Risk

Exercise (3 minutes).

Look up your home address on your country's official flood risk map. Note whether you are in a flood risk zone, and which type of flooding it identifies.

Section 1: Key Takeaways

- Know your flood type: river, flash or coastal — each gives you different warning time
- A known, mapped risk still needs someone to act on it — five countries, five proofs
- Learn your own country's warning scale before a flood happens, not during one

02

PREPAREDNESS

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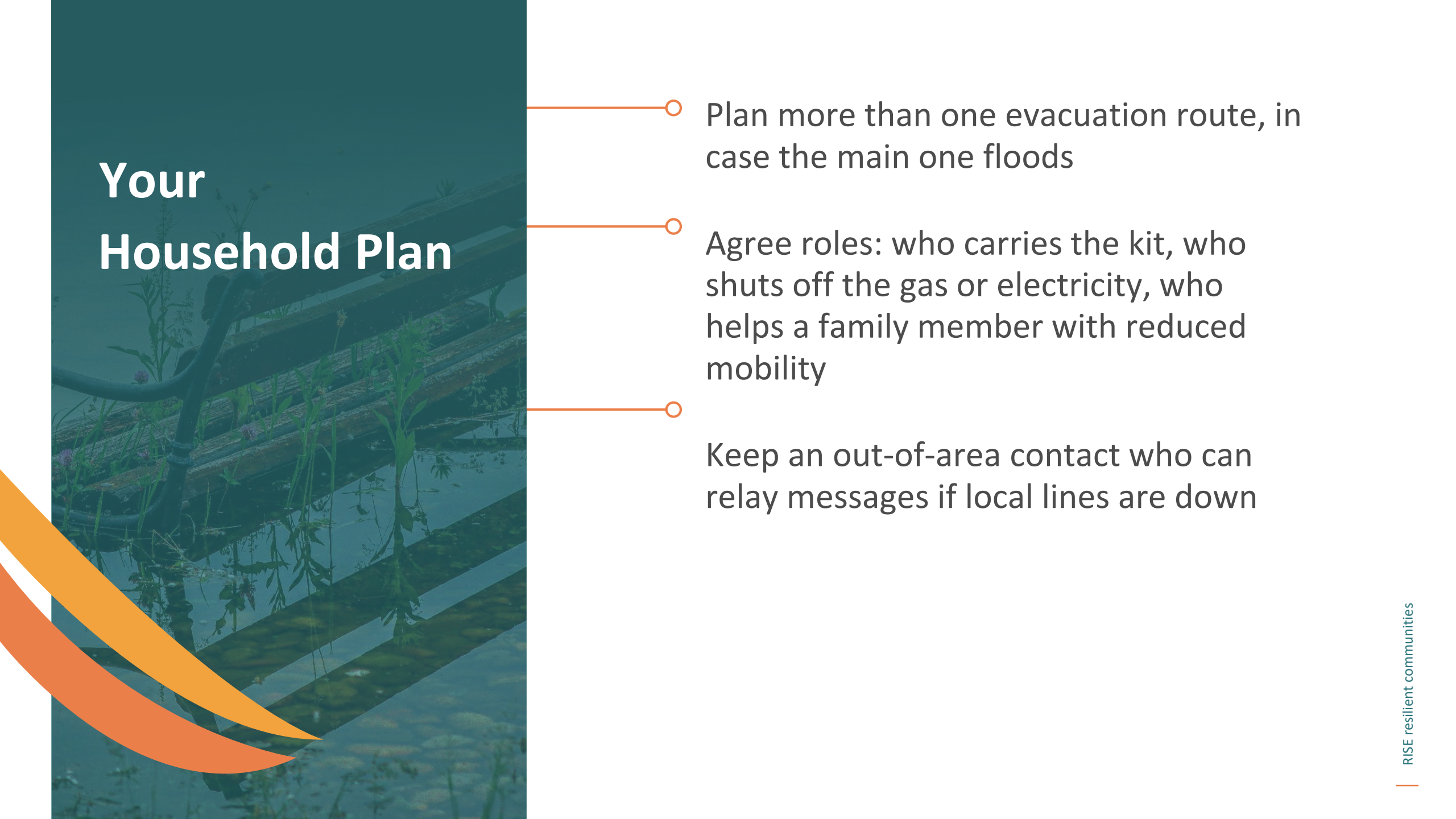
Your Household Plan

“Luck is what happens when preparation meets opportunity” — in a flood, luck is called prevention

Know the risks in your immediate area: which ravine, stream or low-lying road is closest to your home

Check your home for weak points: an unprotected basement, drains without non-return valves, and where your gas/electric shut-offs are

Sketch your home and street, marking hazards, evacuation routes and two meeting points — one inside the home, one outside the neighbourhood



Your Household Plan

- Plan more than one evacuation route, in case the main one floods
- Agree roles: who carries the kit, who shuts off the gas or electricity, who helps a family member with reduced mobility
- Keep an out-of-area contact who can relay messages if local lines are down



Your Pet Plan

Many public shelters do not accept animals, so a pet plan has to be made in advance

Identify pet-friendly accommodation along your likely evacuation routes

Arrange a backup: a neighbour, friend or relative who could evacuate your pet if you cannot

Ask your vet whether they can house animals in an emergency, and keep their number to hand



Your Pet Plan

- Microchip your pet, and fit a collar tag with your name and a phone number, ideally one outside the area
- Practise getting your pet into its carrier or on a lead quickly, so it isn't the first time in a real evacuation
- **Never leave a pet behind.** If authorities tell you to evacuate, take your pet with you.

Your 72-Hour Kit

For surviving 72 hours at home or in a nearby shelter — easy to grab and carry.

ITEM	✓
Copies of important documents in a waterproof bag	
Torch and spare batteries	
A battery or wind-up radio	
Drinking water and non-perishable food for three days	
A basic first aid kit and any personal medication	
Warm, dry clothing and a thermal blanket	

Your 72-Hour Kit

For surviving 72 hours at home or in a nearby shelter — easy to grab and carry.

ITEM	✓
A phone charger and a power bank	
Cash, since card machines may not work without power	
Your house keys — an easy thing to forget in a rush	

Key Action: Move One Item

- Choose one kit item currently stored at ground level
- Move it above the flood line, or above waist height if unsure
- Tell one other household member where it is

At Community Level

- A survey of RISE participants found that most had never taken part in a flood drill, yet the first people to respond in a flood are always neighbours, not officials
- **Join or start a flood watch group.** Find out whether your area has one, a local alert chain, or a sandbag point.
- **Support vulnerability mapping.** A shared record of risk zones, evacuation routes, shelter buildings, and — with consent — who may need extra help.
- **Back up digital communication.** Community radio, loudspeakers or a phone tree that doesn't depend on the internet.

At Community Level

- **Ask about the municipal emergency plan.** After the Valencia floods, towns including Algemesi and Paiporta set up their own Local Emergency and Reconstruction Committees.
- **Support a resilience hub.** Some Irish community centres stocked supplies — water, blankets, a portable kitchen — during coastal flooding.



Key Action: Community Level

- Find out who organises flood response in your area — a residents' association, a civil protection volunteer group, or a council contact
- Save their number
- Share it with one neighbour this week

Section 2: Key Takeaways

- Preparedness moves outward: household, then home, then street, then community
- A plan is only useful if everyone in the household knows their role
- Never leave a pet behind — plan for them just as you plan for people
- The first people to respond in a flood are always neighbours, not officials

03

DURING THE DISASTER

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Protecting Yourself and Your Household

When the water rises, formal emergency services cannot be on every street — the first people to help are almost always neighbours

Act at the first sign of an official alert, or if you see water rising quickly — don't wait to see how bad it gets

Turn off electricity and gas at the mains if water starts to enter your home and it's safe to reach the switch

Keep important documents with you, or move them to an upper floor



Protecting Yourself and Your Household

- Do not use lifts

- **If water rises into your home**, move to an upper floor or the roof and signal your position — never try to leave through floodwater.

- **Save lives, not property.** Don't waste minutes protecting furniture or a car — get to safety and help vulnerable neighbours.



**JUST 15cm OF FAST-MOVING
WATER CAN KNOCK OVER AN
ADULT. 30cm CAN FLOAT A CAR.**

Australian Institute for Disaster Resilience / UK
Environment Agency

At Community Level

- Once your own household is safe, check who else needs help — use the contact list and vulnerable-neighbour register from Section 2.2
- Neighbours are often the first responders in practice — organise spontaneously but safely, forming human chains only with proper safety lines
- High ground that hasn't flooded can become a natural coordination point for sharing information and organising help
- Use a neighbourhood messaging group set up in advance — during the Valencia floods, WhatsApp and Telegram groups by street or block shared which roads were closed and coordinated deliveries
- If mobile networks and power both fail, a pre-agreed backup — a walkie-talkie network, a

Verify Before You Share

- Panic and misinformation spread fast during a flood: rumours, old footage, unverified claims
- Only forward information from official sources, such as your national emergency number, your local authority or civil protection
- Sharing false information can send emergency resources to the wrong place, or lead someone to make a fatal decision

Section 3: Key Takeaways

- Save lives, not property — get to safety first
- 15cm of moving water can knock you over; 30cm can float a car — never cross it
- If water enters your home, go up, not out — upper floor or roof, then signal
- Verify before you share — false information can be fatal

04

AFTER THE DISASTER

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Coordination and Communication



○ The Valencia floods showed both the strength and the difficulty of mass solidarity: an estimated 100,000 volunteers arrived within days

○ The best-organised response set up volunteer registration points from day one

○ Volunteers were given protective equipment and assigned to specific, safe tasks

○ Letting help arrive unorganised slows everyone down — coordination is what turns willing hands into an effective response

Digital Tools and Misinformation

- The same verify-before-sharing rule from Section 2.3 applies to recovery, not just the emergency itself
- Unverified before-and-after images can cause real harm
- Rumours about which areas are safe to return to can send people back too soon
- The same rumours can also keep aid from reaching where it's actually needed

Psychological Dimension

Flood recovery is slower and less visible than recovery from other hazards, and the toll is measurable

A survey found almost 28% of adults affected by the 2024 Valencia floods showed signs of PTSD

Spain's government set up a dedicated mental health emergency unit in response

Repeated flooding, the loss of belongings, and a long wait for compensation all add strain that's easy to underestimate

Talking to neighbours and taking part in community support is not a sign of

Short-Term Actions

- Floodwater is frequently contaminated with sewage and chemicals — treat the mud left behind with care
- Wear gloves, a mask and boots, and disinfect surfaces
- Community kitchens, phone-charging points, temporary shelters and mobile health clinics are usually needed within the first 72 hours
- Schools or sports centres are often the first spaces converted for this use
- Joining an organised community clean up gets far more done, far faster, than

Long-Term and Sustaining Solutions

- Recovery choices made months and years later shape how well the next flood is survived
- Italy's Emilia-Romagna appointed a single Extraordinary Commissioner for Reconstruction to cut through bureaucracy
- Türkiye chose not to rebuild in Kastamonu's worst-hit riverside areas, relocating buildings and redesigning river defences instead
- Ontinyent, Spain rebuilt a damaged neighbourhood not as housing but as a flood-absorbing park
- Recovery isn't only physical — in Horta Sud, a campaign to bring back tourism and local trade recognised that a community also recovers when the local bakery reopens

Section 4: Key Takeaways

- Recovery follows five threads at once: coordination, digital tools, psychology, short-term action and long-term rebuilding
- Organised help works better than unorganised help — register, don't just show up
- Talking about the toll is part of recovering from it
- The best long-term recovery decisions build something more resilient than what was lost



**ONE PERSON. ONE ACTION. ONE
RESOURCE.**

Before you finish this module, write down three things.





Closing Reflection

○ **One person.** Name someone in your community you will check on this week.

○ **One action.** Name one preparedness step from Section 2.2 you will complete this month.

○ **One resource.** Name one resource: your civil protection number, your emergency plan, or a volunteer group.

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