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Food Systems Learning Journey

A learning adventure taking us around the globe to understand and act more systemically

1st Global Seminar

The Middle East & North Africa Regional Workshop

Thematic linkages: Water resource management and climate change

2 Intro webinars

Webinar Jan ‘23

Webinar Jan ‘23

Webinar Apr ‘23

Webinar May ‘23

Summative event June ‘23

W. Africa

MENA

S/E-Africa

Asia

L. America

Regional workshop

Network webinar

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The Middle East & North Africa Regional Workshop

- *Welcome, SDC objectives and purpose and plans of the FSLJ*

- *Methodological content / process plan for regional workshops*
- *(John Ingram)*
- *Introduction to water issues in the MENA region*
- *(Walid Abed Rabboh)*

- *Q&A [mentimeter]*
- *Hypotheses*
- *Discussion*

- *What's next and details on the next webinar? (25th January)*

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Methodological content & process

Dr John Ingram

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Purpose of the FSLJ Regional Workshops

To provide a 'learning-by-doing' method where SDC staff and partners jointly identify the strengths and challenges, and the potential direction and/or steps forward, towards more sustainable and resilient food systems.

⇒ A common understanding of food systems

⇒ Strengthen ties at the regional levels, beyond the national boundaries, between the SDC cooperation offices and with the partners

⇒ Provide a roadmap for SDC and partners on how to contribute to sustainable food systems in the years to come including an understanding of global and regional priorities

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Methodological content and process plan for regional workshops

Each Workshop will include:

- ✓ Food system concepts and systems thinking
- ✓ 'Soft systems methodologies' to work with food systems
- ✓ Foresight approaches
- ✓ Resilience concepts
- ✓ A combination of discussion seminars and group exercises

Participants identify and work together on key national and/or regional challenges in relation to the SDC Thematic Areas:

Water, Climate, Nutrition, DRR, Market Systems Development

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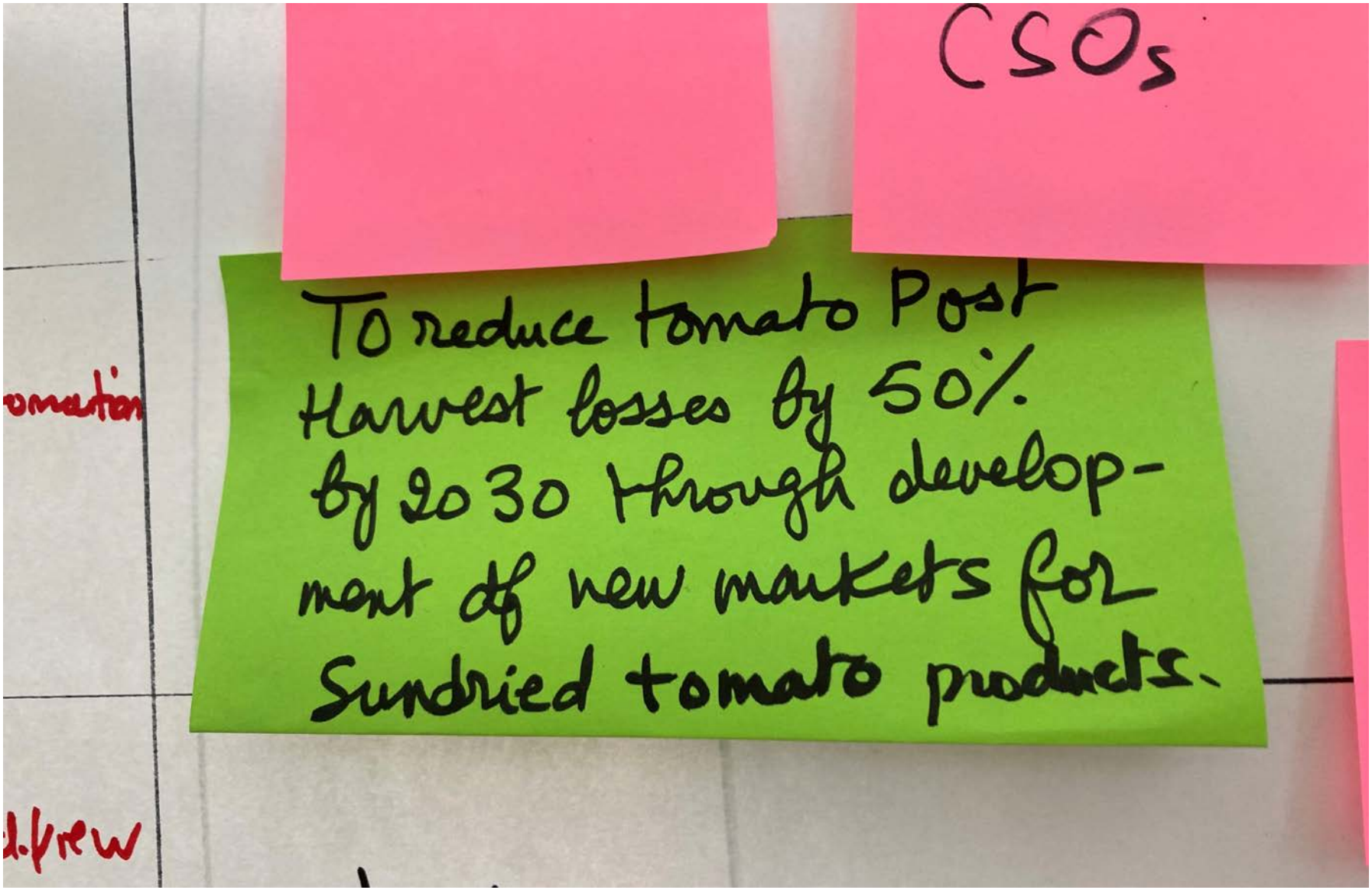
Typical Workshop Outline over 2 days

1. Food Systems concepts and dynamics [discussion seminar]
2. Regional context [discussion seminar]
3. Project mapping to food systems framework [group exercise]
4. Systems thinking, framings and boundaries [discussion seminar]
5. Topic identification [group exercise]
6. Rich Pictures [group exercise]
7. Transformation Statements [group exercise]
8. Trade-off analysis (BATWOVE) [group exercise]
9. Stakeholder identification and mapping [group exercise]
10. Foresight theory and concepts [discussion seminar]
11. Bringing about change and backcasting [group exercise]
12. Resilience theory and concepts [discussion seminar]

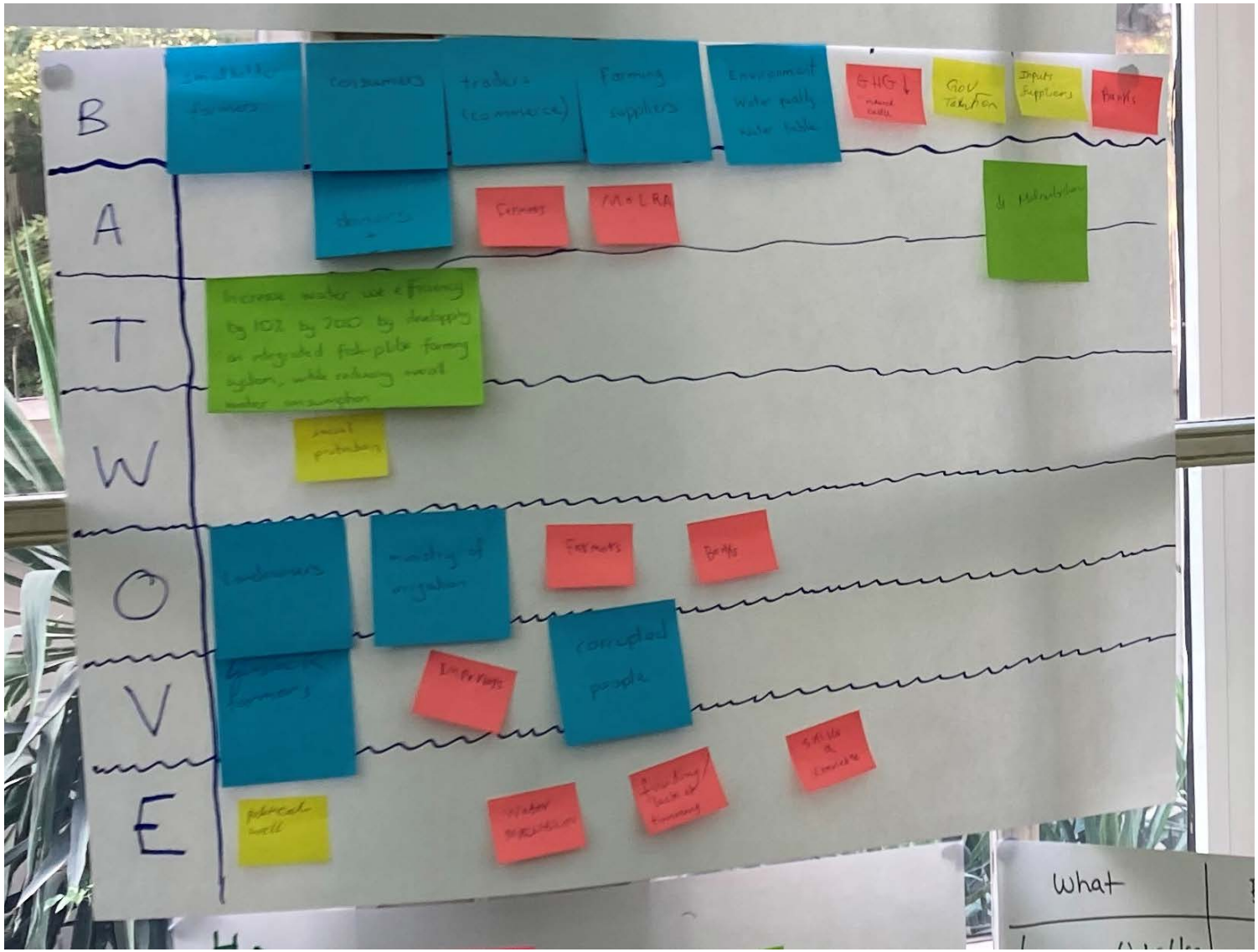
Possible field trip if extended to 3 days

Transformation Statements

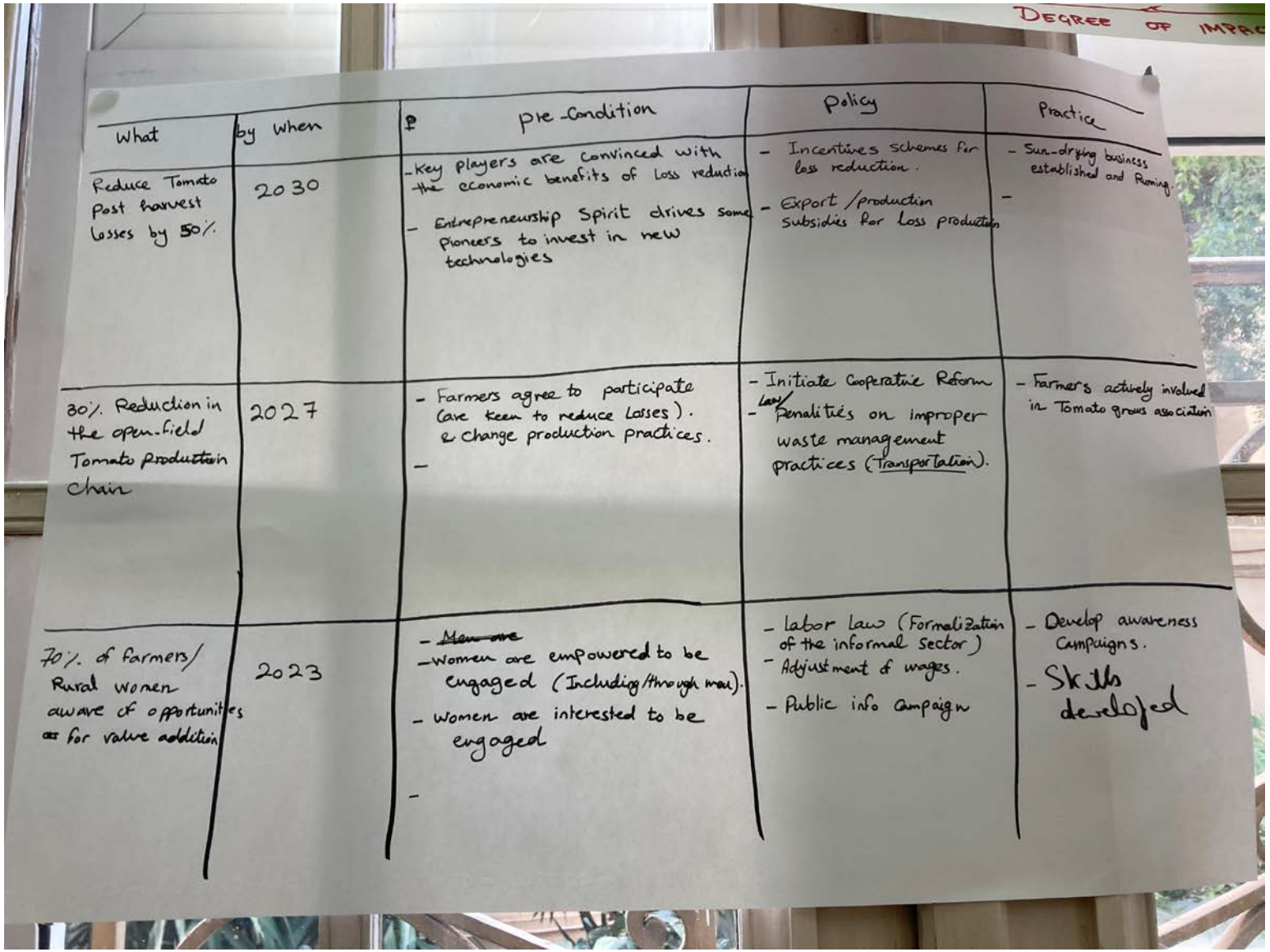


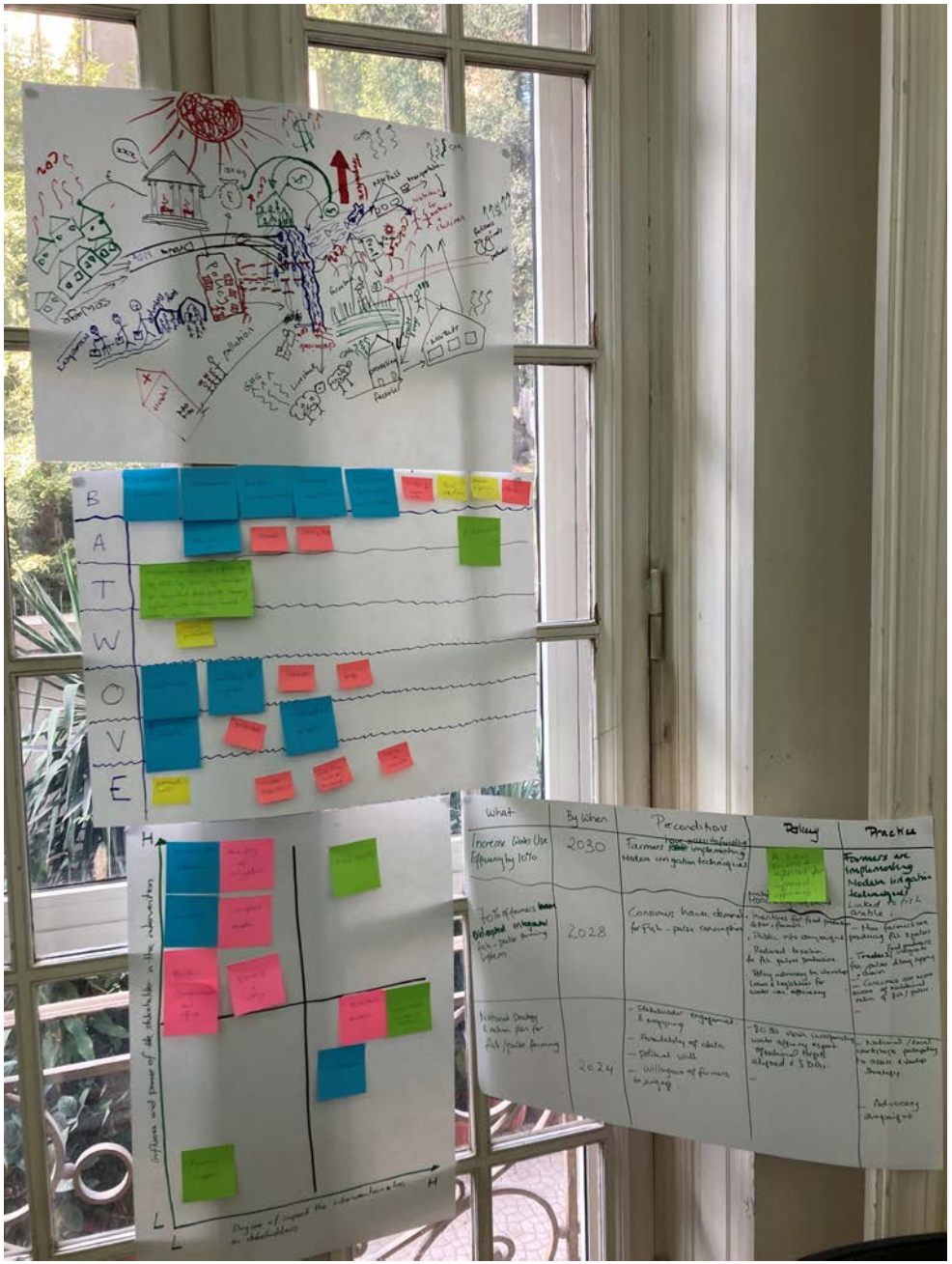
Rich Pictures

Trade-off analysis (BATWOVE)



Backcasting





Working Group output ‘Scaffolding’:

1. Rich Pictures
2. Transformation Stmt
3. BATWOVE
4. Stakeholder Mapping
5. Backcasting

https://www.foodsystemsdashboard.org/

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Introduction to water issues in the MENA region

Walid Abed Rabboh

Introduction to the water resource management and food system issues in MENA region

MENA is the water scarcest region in the world, most of its water originate from or shared with other countries

- Experts participated in the WEF 2015 stated that the water crisis is "the greatest threat to the MENA—greater even than political instability or unemployment".

- More than 60% of the population has little or no access to drinkable water and over 70% of the region's GDP is exposed to high or very high-water stress.

- The share per capita / year in 18 out of 22 countries is less than 1000 m3 and in 13 out of 22 is less than 500 m3

Introduction to the water resource management and food system issues in MENA region

Water scarcity, food insecurity and climate change are exacerbated by the conflicts and wars in the region and outside which result in more refugees and displaced persons, competition over services and resources and price hikes

Weak water governance systems

- Policy coherence and harmonization
- Weak regulatory framework
- Weak institutional setup
- High ratios of water are unaccounted for
- Subsidies

Agriculture consumes the lion share of the available water

- Agriculture constitutes a major or additional source of income for a sizeable share of the population in the region; most of them are small or subsistence farmers living in rural areas.

- Agriculture water share ranges from 91.5% in Iraq to 53.1% in Jordan, while the value-added of agriculture to the GDP ranges from 10.7% in Egypt to 10%, 4.8% and 4.7% in Tunisia, Iraq and Jordan respectively, the sector employs 20.6%, 18.3%,13.8% and 2.5% of the labour force in Egypt, Tunisia, Iraq and Jordan, while the governments of Tunisia, Egypt and Jordan only allocate 4%, 1.9% and 0.7% of their budgets to agriculture .

- The agriculture water use efficiency and returns are far from being optimal

Water is a victim of and a solution for climate change effects

- The region is highly vulnerable to climate change and will become drier
- Drought frequency will increase by 20%-60%
- Desertification and sandstorms effects will increase while vegetative cover and wildlife will diminish

Despite the fact that the region imports most of its food, the region is the highest food waster worldwide.

- In Western Asia the food waste/capita/year is 110 kg

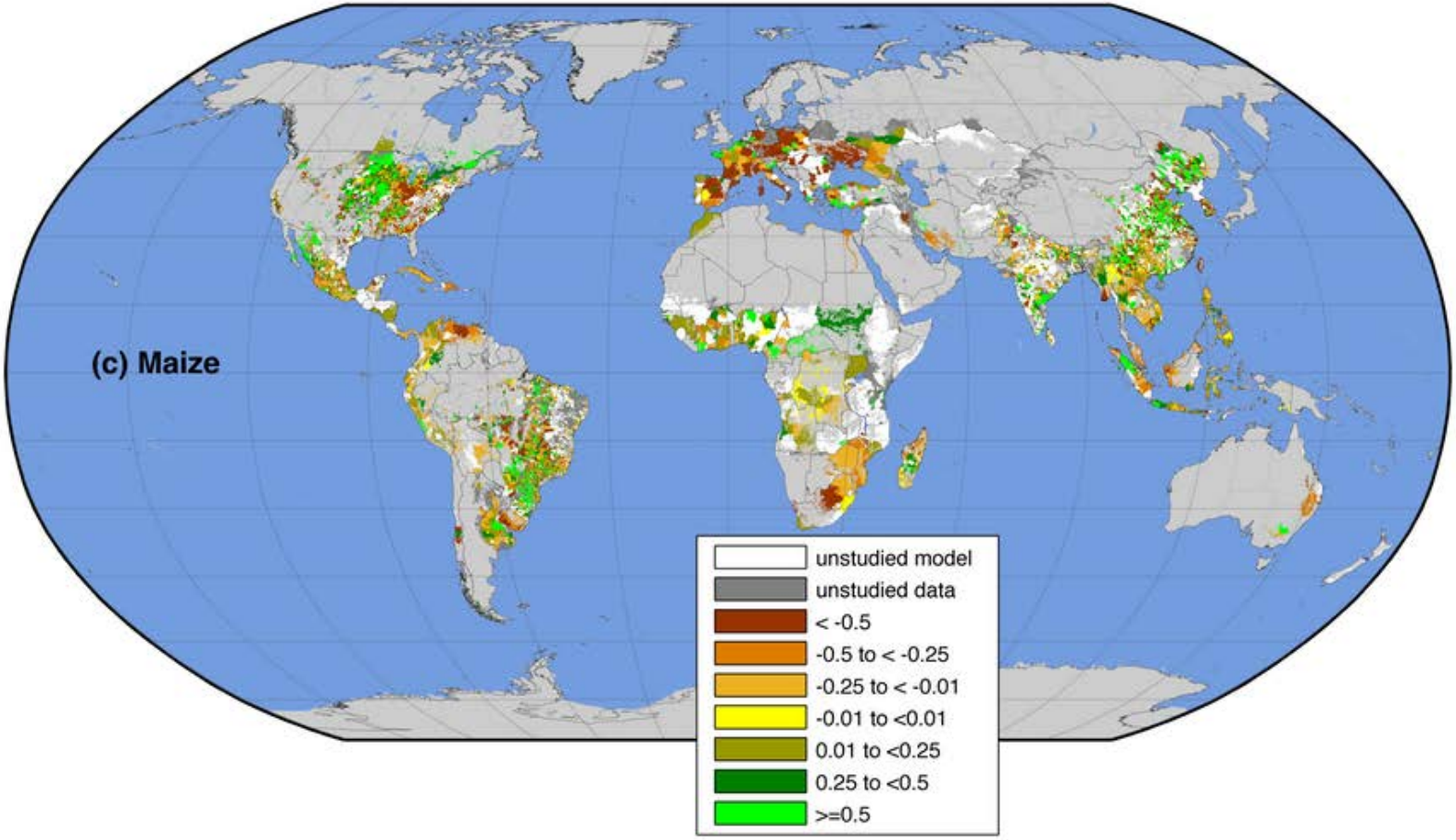
- Some MENA countries lose from 80 to 177 cubic meters per capita of freshwater resources in the food supply annually. At the same time, MENA does not collect half of the wastewater and returns 57% of the collected wastewater to the environment untreated, causing health problems and high level of wasted water resources.

- The table below predicts the results of a recent calculations of the national water loss and waste as a result of FLW in Jordan

Food item	Vegetables	Fruits	Cereals	Olives	Poultry meat	Red meat	Total
Production	1500	378	150	250	220	77	2575
Loss	25%	20%	12%	20%	10%	7%	470
	300	75	18	50	22	5	
Export	374	92	0	20	0	0	486
Available to consumption	826	211	132	180	198	72	1619
Waste	25%	20%	10%	2%	2%	10%	276.66
	206.5	42.2	13.2	3.6	3.96	7.2	
Total Loss and waste	506.5	117.2	31.2	53.6	25.96	12.2	746.66
Water requirements m3/ton	70	150	1000	1000	30	4000	251.00
Wasted water equivalent (m3)	35,455	17,580	31,200	53,600	778.8	48,800	187,413.80

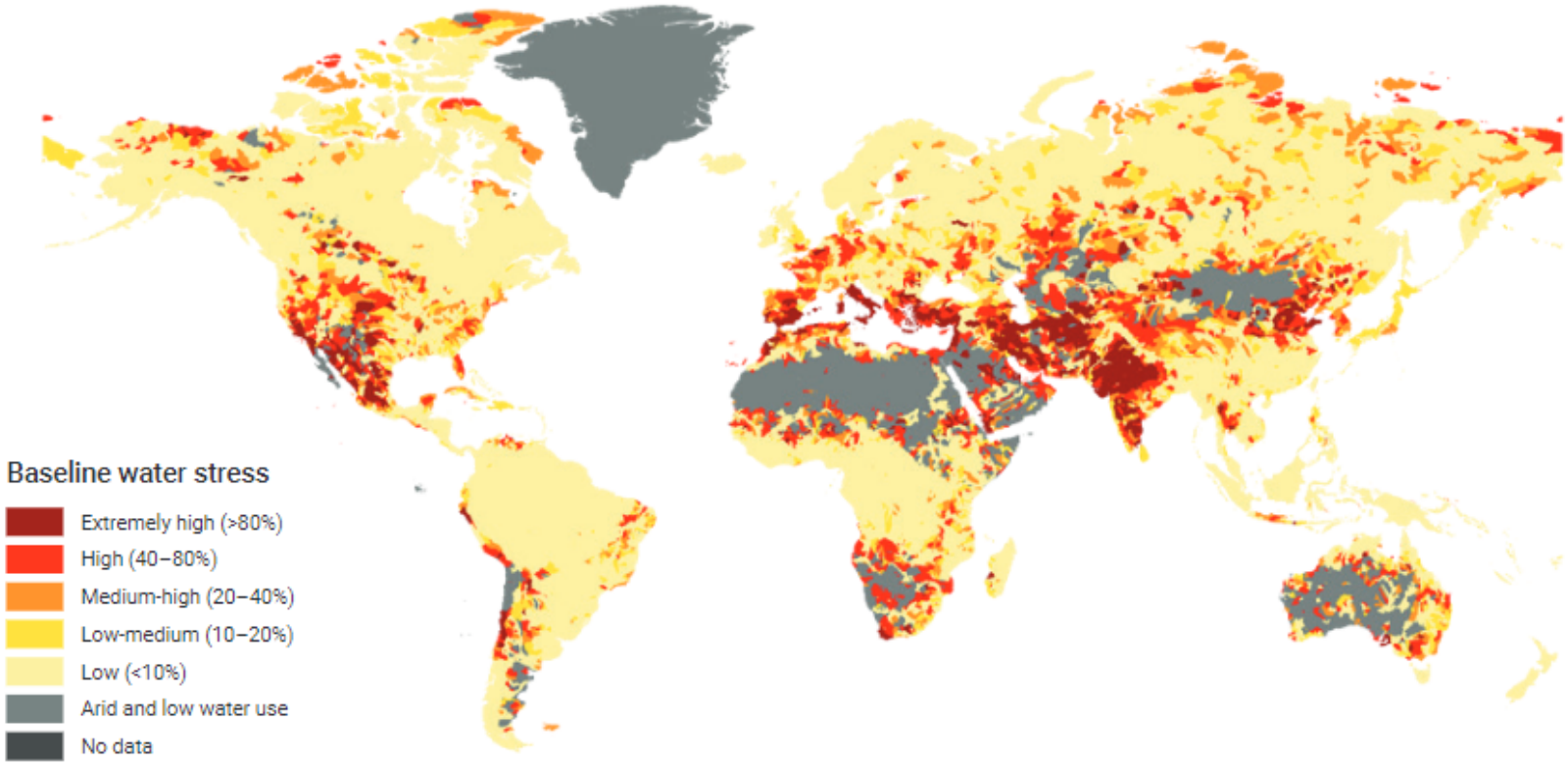
Climate change will depress agricultural yields in most countries in 2050, given current technologies

Impact of mean climate change on crop yield (tons/ha/year).



Ray DK, West PC, Clark M, Gerber JS, Prishchepov AV, Chatterjee S (2019) Climate change has likely already affected global food production. PLoS ONE 14(5): e0217148.

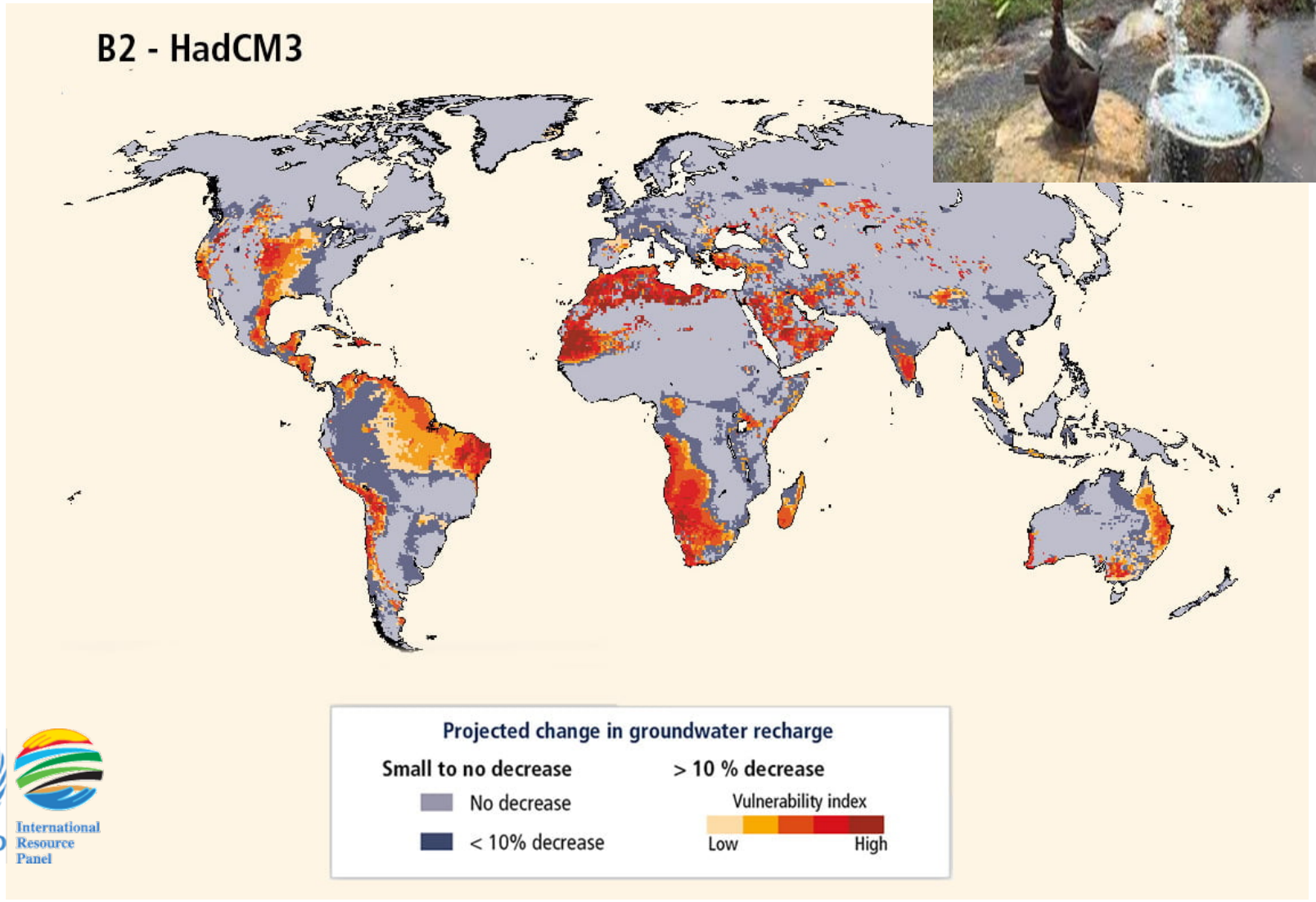
Baseline water stress



Note: Baseline water stress measures the ratio of total water withdrawals to available renewable water supplies. Water withdrawals include domestic, industrial, irrigation and livestock consumptive and non-consumptive uses. Available renewable water supplies include surface and groundwater supplies and considers the impact of upstream consumptive water users and large dams on downstream water availability. Higher values indicate more competition among users.

Source: WRI (2019). Attribution 4.0 International (CC BY 4.0).

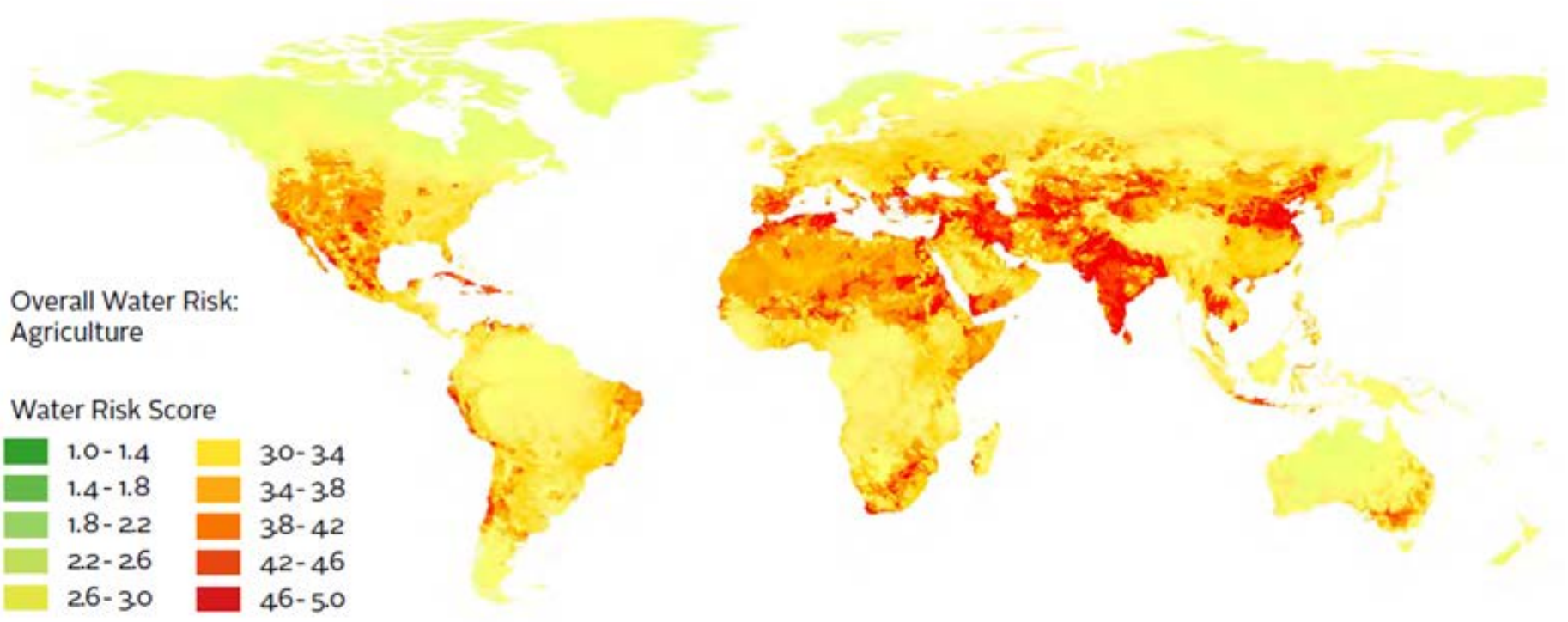
- Fresh water 20% aquifers overexploited



UNEP International Resource Panel

Water-related risks

Overall water risk for agriculture (crops) from WWF Water Risk Filter (2018)



But too much water from extreme weather events can disrupt food distribution systems …

… and food storage.

Food processing is a major user of fresh water

Breakthroughs in food processing have focused on water reuse by treatment and decreasing waste to minimize water use.

Borghi et al, 2020

Water quality can be as important as quantity

Over 300 million Africans lack clean water.

Drinking contaminated water and lack of adequately equipped medical facilities has affected Africa through killer diseases like typhoid, cholera, and dysentery.

Millions eating food grown with polluted water, says UN report

Study of 53 cities across the world finds 'widespread' use of waste water contaminated with heavy metals and sewage

Some “hypotheses”

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‘Hypotheses’ drafted at the Cairo water-focussed workshop

Hypothesis: A proposed explanation made on the basis of limited evidence as a starting point for further investigation.

H1 Good water governance in MENA countries is needed to enhance food security and natural resource management

H2 Food system resilience would be enhanced by integrated water management practice (amongst other things…)

H3 A food system approach helps manage trade-offs and identify synergies between healthy diets, livelihoods and natural resource management

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Upcoming Workshops

→ W, E & S Africa online event: 25th January 10 – 11:30 CET

Asia / Tashkent – 16th/17th March (En)
Asia / Bangkok – 20th/21st March (En)

→ Asia online event: 5th April 2023 9 – 10:30 CET

Latin America / Harare – Santa Cruz 18th/19th April (Sp)

→ Latin America online event: 5th May 16 – 17h CET

Thank you for joining us!

See you soon….

… in Harare?
… in Tashkent?
… in Bangkok?

… or online?