



# UNVEILING THE NEXUS: - WOMEN'S EMPOWERMENT, CLIMATE CHANGE AND HOUSEHOLD WELL-BEING IN UZBEKISTAN



INITIATIVE ON  
NEXUS Gains



Standing  
Panel on  
Impact  
Assessment



GENDER Impact  
Platform



INITIATIVE ON  
Fragility to Resilience in Central  
and West Asia and North Africa

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# Background

- Uzbekistan program to encourage water saving technology adoption, partially due to WLE research
  - Targeting large farmers- cotton and wheat
    - Reduce fossil energy use for pumping of irrigation water to upland irrigation systems,
    - to save increasingly scarce water resources in the country, and
    - to improve crop productivity.
  - Does not reach small and women farmers
  - 80% of non-cereal food produce on small farms - primarily fruits and vegetables
- Little is known about how intra-household dynamics contribute to the heterogeneous relationship between gender and energy (water, electricity, technology) access/use.

# Knowledge gaps–Gender and Agriculture in Uzbekistan



- Gender sensitive agrarian policies hampered by lack of gender-disaggregated data
- Daily activities that use energy are activities in which women are engaged, but women bear the costs of unequal distribution of energy.
- We use intra-HH diagnostic surveys to establish baseline measurements of women and men's role in agriculture, capturing small and large farmers, cash and food crop farmers
- Include choice experiment to measure willing to pay for efficient energy utilization on and off farm
- First to field WEAI in Uzbekistan

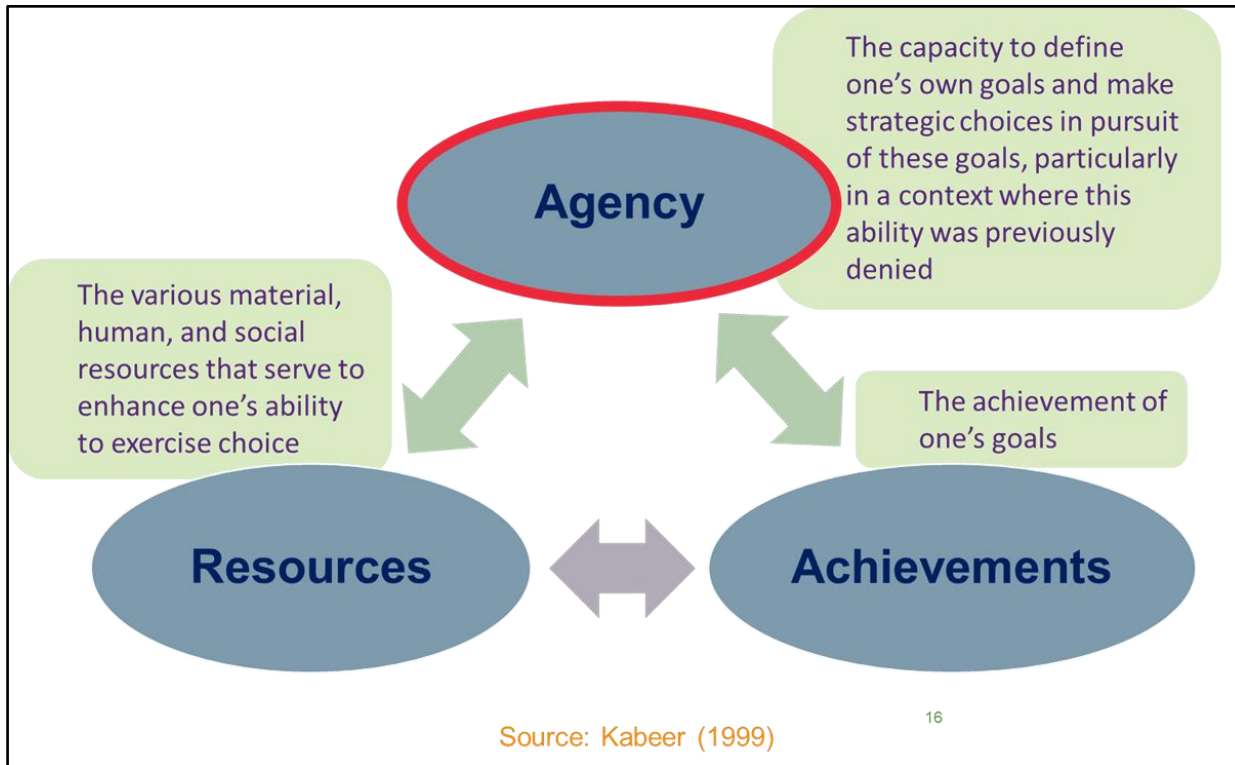
# Research questions

- Objective 1: Understanding of levels and domains of women's empowerment in irrigated areas of Uzbekistan
  - Research Question (RQ1): What are levels and domains of women's empowerment in irrigated areas of Uzbekistan?
- Objective 2: Evaluation of the climate smart irrigation subsidy program of the Uzbekistan government
  - RQ2.1: What are constraints to the adoption of the water saving technologies by large-scale and small-scale women and men farmers?
  - RQ2.2: What is the relationship between women's and men's empowerment, climate change adaptation, mitigation, food security, and nutrition?
- Objective 3: Understanding women and men's energy empowerment
  - RQ3.1: How involved are women and men in decisions around the use and sources of energy technologies, and energy sources for domestic and productive use?

# Research methods

- Intra-household survey covered individual demographics, socioeconomic status, agricultural practices, crop economics, WEAI, and food consumption patterns.
- Choice experiments explore
  - Household preferences and WTP for water-saving technology characteristics
  - Women's and men's willingness to pay for on and off-farm reliable electricity
- The survey closely follows similar surveys conducted in India, Pakistan, and Nepal as part of Nexus Gains,
  - Creation of a regional gender disaggregated database covering the Indus, Aral Sea, and Ganga basins,
  - Energy use, climate change perceptions, coping and adaptation strategies, and use of climate-smart agricultural practices.
  - Inform design and targeting of future policies for small farms

# What is empowerment?



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## Women's Empowerment in Agriculture Index (WEAI)



Collaborative effort between Oxford Poverty and Human Development Initiative (OPHI) and IFPRI



5 different dimensions of empowerment



Extent of empowerment



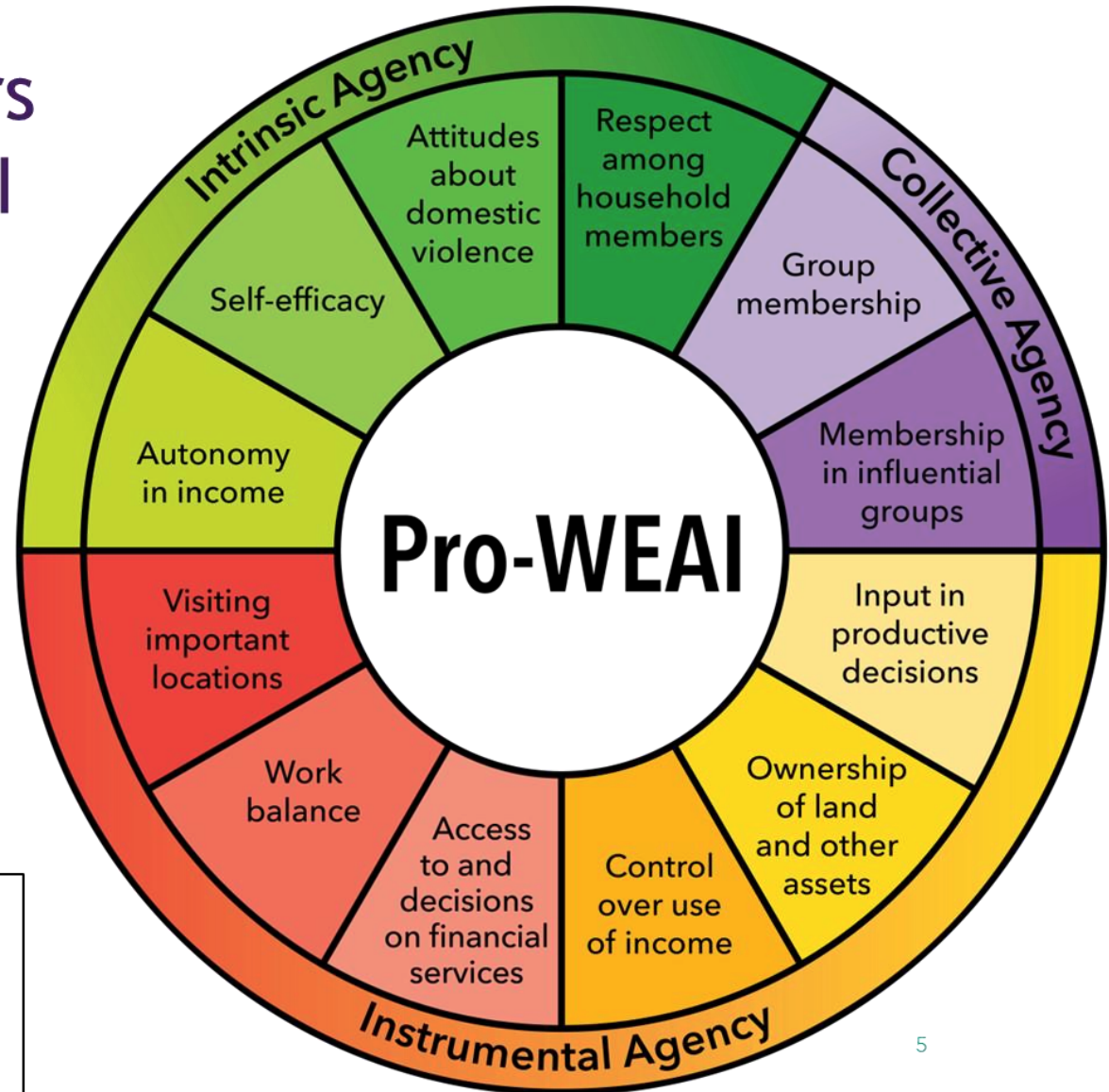
Intra-household gender parity (empowerment relative to men)

# Pro-WEAI

## 12 indicators in pro-WEAI

Each indicator receives an **equal** proportion (1/12) of the overall weight

**Empowered** if adequate in 75% of indicators



# Results

		Incidence of Inadequacy (%)	
Domain	Indicator	Women	Men
Intrinsic Agency	a Autonomy in income	26.2	19.9
	b Self-efficacy	26.0	19.2
Instrumental Agency	a Input in productive decisions	59.3	54.2
	c Ownership of land and other assets	52.2	50.8
	d Access to and decisions on credit	63.3	57.3
	e Control over use of income	57.3	47.0
	f Work balance	60.2	44.4
	g Visiting important locations	39.2	26.0
	a Group membership	97.7	96.2
Collective Agency			

# Results

<b>Work balance</b>	<b>W</b>	<b>M</b>
Mean time spent on productive work (hours)	11.6	9.4
Mean time spent on domestic chores (hours)	4.6	2.3
Mean time spent on caring for children (hours)	5.6	2.8

<b>Group membership</b>	<b>W</b>	<b>M</b>
% of respondents in agri producer group	0.3%	0.6%
% of respondents in water user's group	0.3%	0.9%

# WEES Indicators

	Indicator	Adequacy definition
1	Has unrestricted access to mechanized productive assets	Adequate if respondent has unrestricted access to at least one mechanized asset that the household has access to for income generation (tractor, pump, sewing machine, etc.)
2	Has unrestricted access to mechanized consumer durables for domestic use	Adequate if respondent has unrestricted access to at least one mechanized consumer durable the household has access to for domestic use (television, fridge, cookstove, etc.)
3	Decides on acquiring energy source for domestic use	Adequate if solely or jointly decides which energy source to acquire for cooking, heating, and lighting
4	Decides on acquiring energy source for productive use	Adequate if solely or jointly decides which energy source to acquire for all agricultural and other income-generating activities applicable to the household
5	Acquires energy source for domestic use	Adequate if solely or jointly responsible for acquiring energy source for cooking, heating, and lighting
6	Acquires energy source for productive use	Adequate if solely or jointly responsible for acquiring energy source for all agricultural and other income-generating activities applicable to the household

# WEES- Results

Indicators	Women	Men		
	Mean	Mean	diff	Sig
Has unrestricted access to productive assets	10%	12%	-3%	**
Has unrestricted access to consumer durables for domestic use	97%	97%	0%	
Decides on acquiring energy source for productive use	14%	46%	-32%	***
Decides on acquiring energy source for domestic use	29%	69%	-40%	***
Acquires energy source for productive use	8%	43%	-36%	***
Acquires energy source for domestic use	11%	65%	-54%	***
Mean composite score (WEES)	0.28	0.55	-0.27	***

# Results- FIES, MDD, NCD

- Overall food insecurity in Uzbekistan is low
- Diets are diverse and most respondents-male and female are consuming at least a minimally diverse diet.
- Low consumption of unhealthy foods, but also lower consumption of healthy foods like whole grains, pulses, vit A rich veg & fruits
- Overall- women score lower than men

# Results

- Farmers reporting receiving any extension training or advice very low
  - Men 10%
  - Women 5.2%
  - A significant proportion of this information/training is received from informal sources such as friends, relatives.
- Nearly 38% respondents reported experiencing climate related shocks- men more likely to report

# WTP for energy and water-saving technology



- WTP to pay for reliable energy
  - Asked to all respondents- men and women
  - Process:
    - Step 1: Ask households about their current electricity price and outage days.
    - Step 2: Generate a choice table based on this information.
    - Step 3: Present table, ask preferences, then repeat with a new table based on responses.

	Choice 1	Choice 2	Choice 3
Electricity: Price	3\$ per kWh	7\$ per kWh	1\$ per kWh
Electricity: Days of Outage	2 days	1 days	7 days

- Overall, people willing to pay 10% more for one less day of outage.
- Women willing to pay more than men
- But there is heterogeneity--Those who experience outages (50% of respondents), more likely to pay more for reliable energy access

# WTP for energy and water-saving technology

- WTP or WTA water saving technology
  - Respondents asked WTA drip irrigation at different subsidy levels
  - Only asked to primary decision maker (90% men)
  - Process
    - Random Start: Selects a subsidy amount (0-24 mln UZS/ha).
    - Decision Process:
      - If NO: Increase subsidy by 4 mln UZS/ha until YES or max (25 mln UZS/ha).
      - If YES: Decrease subsidy by 4 mln UZS/ha until NO or 0.
  - Average size: 0.1-0.2 ha

# WTP for energy and water-saving technology

- WTA increases with subsidy level
- Women more willing to pay at higher subsidy level
- Information or affordability?

