

Expert Group Meeting on Promoting Best Practices
On sustainable Rural Livelihoods in the ESCWA Region
Beirut, 24-25 November 2010

SUSTAINABLE LIVELIHOODS AND FOOD SECURITY UNDER CHANGING CLIMATE IN DRY AREAS

by

Mr. Aden Aw Hassan, ICARDA



Sustainable Livelihoods and Food Security under Changing Climate in Dry Areas

*Aden Aw Hassan
Director*

Social, Economics and Policy Research Program, ICARDA

***Expert Group Meeting on Promoting Best Practices on Sustainable Rural Livelihoods
in the ESCWA region***

24 – 25 November 2010 , Beirut, Lebanon



Main points of the presentation

- SLA as a strong conceptualizing and diagnostic tool in rural development.
- Food security at different levels.
- Climate change and its implications on food security and vulnerability to rural livelihoods.
- ICARDA's research efforts.
- State of rural livelihoods in dry areas: from past work.
- Conclusion and recommendations.



SLA as conceptual & diagnostic model

- It encompasses all important dimensions including:
 - HH assets: human, physical, natural, financial and social.
 - HH decision making and trade-offs they face.
 - The external environment:
 - Market, institutions and policies
 - The uncertainty and shocks created by markets and climate change



Food security at different levels

- Food insecurity is becoming a local, national, regional and global concern.
- Drivers of food insecurity:
 - Long-term underinvestment in agriculture and rural development and in agricultural Research & Education.
 - Inefficient and unsustainable farming practices leading to unsustainable natural resources use and their degradation.
 - Poor national policies that send wrong signals to farmers.
 - Uncompetitive practices and policies (subsidies, trade restrictions, dumping, etc) that affect less-developed countries production.

Productivity, &NR uses, &E sustainability

innovations



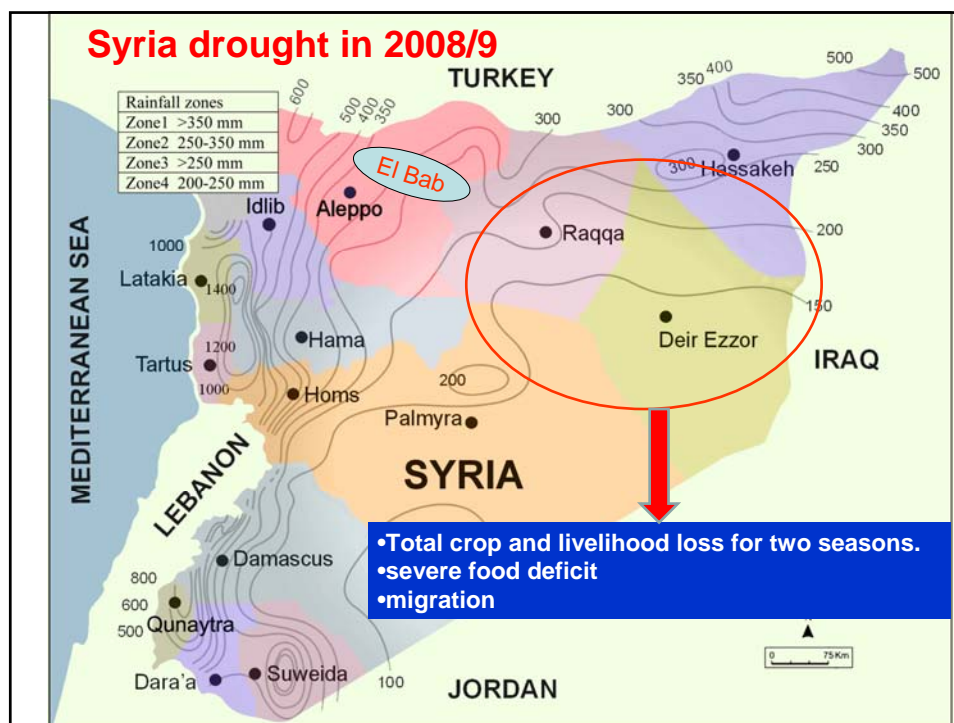
The Role of Climate change

- Climate change will bring new challenges:
 - Higher temperatures and lower rainfall.
 - Drier areas are inherently risky due to weather variability.
 - Increased extreme events such as droughts, storms, floods, etc.
 - Increased incidence of diseases and pests.
 - Increased risk of crop failures and other losses.



The Effects of climate change

- Food security:
 - The resource-poor lose own produce and earnings from the close farming areas.
- Increased poverty/vulnerability:
 - Increased poverty and vulnerability of the poor
- Migration:
 - Unexpected large migration of affected people to urban areas.
- Long term social impact:
 - Loss of children education due to dislocated families would be even higher
- Impact of crops and livestock:
 - The current crops and livestock types may not be as productive as they used to be.



ICARDA

ICARDA's Efforts

- Leads the Consortium Research Program (CRP1.1) on dry areas and contributes to eight other CRPs.
- Conducts rural livelihoods analysis as starting point of adaptive agricultural research-establishing baseline
- Conducts research on:
 - plant breeding to address threats of new insect and disease threats and drought tolerance.
 - Systems productivity and sustainability including new opportunities provided by fruits and vegetables and herbal and medicinal plants.
 - Water and land management t increase productivity and sustain long term use.
 - Economic, social and policy to ensure that proper systems diagnosis is made and the enabling environment is properly considered.

ICARDA research focus on livelihood improvement

- **Agricultural and rural finance:**
 - Linking micro finance to labor intensive farming activities
 - ICARDA is experimenting micro-finance (revolving community fund) for the adoption of land conservation
- **Value addition & market linkage**
 - ICARDA is conducting research on determinants of market access for high value crops in Egypt, Jordan and Morocco
 - ICARDA is evaluating ways to respond to women's development needs: RWC access to market in Lebanon, Marketing of Qashabiya Algeria, water management in Morocco, HMAPs use in Morocco.
- **Research on targeting the poor with immediate intervention:**
 - ICARDA is working with Syrian government on identifying options for the poorest 100 poorest villages
 - ICARDA is planning a large scale randomized experimentation of development interventions on women's empowerment (?)



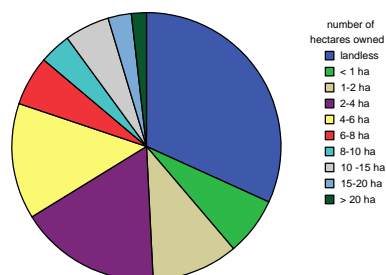
ICARDA

The state of rural livelihoods: evidence from past research

- Large segments of rural households in dry areas live below the income poverty line (15-30%, in some areas in Sudan & Yemen over 50%).
- They are either landless or own small plots and lack other assets.
- They can not access other resources (not credit worthy!).
- They lack (social or public) safety nets.
- Given population growth rate, employment prospects in rural areas are poor.
- Their aspirations- leave to cities or where ever they can get better living.
- The non-agricultural sectors are not growing fast enough to get them employed.
- The hh food and nutritional security can also be at serious risk.
- Rural women are among the most vulnerable facing multiple constraints



Landownership



- 31.8 % of the sample households are landless
- another 7.0 % has less than 1 ha
- 10.4 % between 1 and 2 ha.
- This indicates that 50 % of the population is landless or close to landless; insufficient land as source of livelihood.
- Some 31% of the households have 2-6 ha
- another 9.8 % between 6-10 ha.
- Only 10 % of the households are real big farmers (bigger than 10 ha)
- Our results are similar by those encountered by the Syrian UNDP reports (2002) that suggests from several surveys that 34-37 % are landless.



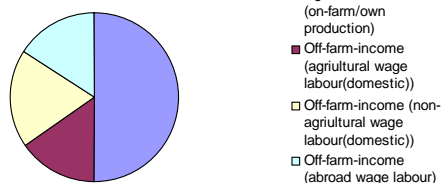
Average annual household Income SL

Income source	Value	%
Farm	97,148	49.4
Off-farm	99,507	50.6
Total	196,655	100

Roughly USD 4184

1USD= 47 SL October 2008

Average relative importance of different income sources at village level



- Farm income close to 50%.
- Farm labor about 13%
- Off-farm non agriculture 37%



Eight distinct livelihood clusters identified

Cluster	LLH strategy
1	Medium size rainfed crop– livestock strategy
2	Mixed crop and off-farm employment
3	Livestock-lead strategy
4	Small scale mixed crop livestock
5	Irrigated crop production
6	Crop-lead mixed crop livestock
7	Unskilled off farm employment
8	Balanced mixed crop livestock

Cluster	LLH strategy	Number of cases	Total own area	Irrigated area	Cereals	Legumes	Vegetable	Cash Crop	Trees	Sheep	Dialy per capita income
1	Rainfed crop– livestock strategy	15	156.3	0.67	82.47	58	1.3	0.0	16.2	22.7	104.1
2	Mixed crop and off-farm employment	48	60.19	10.7	53.0	1.9	0.6	2.4	2.8	11.8	64.8
3	Livestock-lead strategy	20	45.92	5.7	30.3	5.6	0.7	5.2	5.2	97.4	130.4
4	Small scale mixed crop livestock	120	23.35	5.8	12.6	3.2	1.3	3.3	2.6	14.4	61.1
5	Irrigated crop production	60	68.9	15.3	54.3	1.7	2.1	14.0	5.7	22.3	80.8
6	Crop-lead mixed crop livestock	14	235.9	6.3	168.8	7.1	0.0	2.0	11.4	31.1	130.1
7	Unskilled off farm employment	196	12.0	1.7	8.5	1.1	0.3	1.0	1.2	8.6	59.8
8	Balanced mixed crop livestock	15	116.8	6.7	102.3	5.2	0.2	2.0	11.7	87.1	99.3
Total	All	488	42.0	5.7	30.1	4.0	0.8	3.5	3.5	19.1	

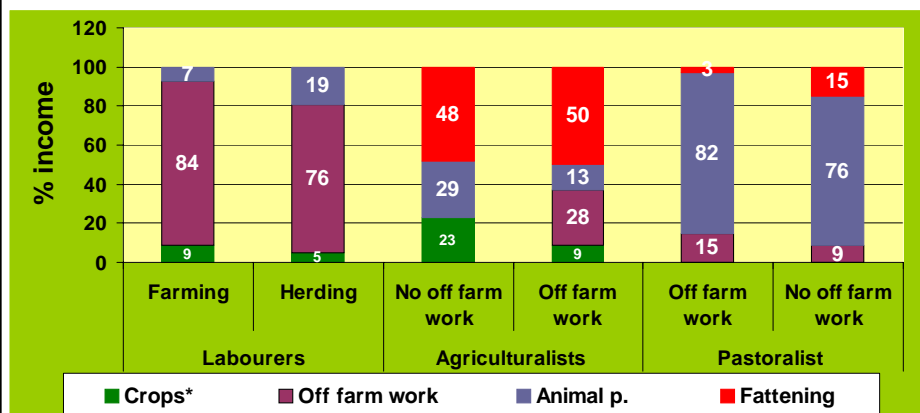
Income shares (%) of different livelihood strategies

Cluster	LLH strategy	Number of cases	unskilled labor	self employment	Gov. job	crop and trees	livestock	Total off farm
1	Rainfed crop–livestock strategy	15	11.1	3.4	0.9	76.2	10.2	13.6
2	Mixed crop and off-farm employment	48	54.7	5.4	0.1	31.9	8.6	59.5
3	Livestock-lead strategy	20	22.8	13.1	0.8	25	44	31
4	Small scale mixed crop livestock	120	15.3	17.6	6.8	42.3	20.2	37.6
5	Irrigated crop production	60	5.6	3.2	1.3	72.8	17.8	9.4
6	Crop-lead mixed crop livestock	14	7.5	24.5	0.2	62	15.1	22.8
7	Unskilled off farm employment	196	83	2	0.3	8.3	6.4	85.3
8	Balanced mixed crop livestock	15	9.9	12	0	46.1	36.2	17.7
Total	All	488	45	7.8	2	32.4	14.2	53.4

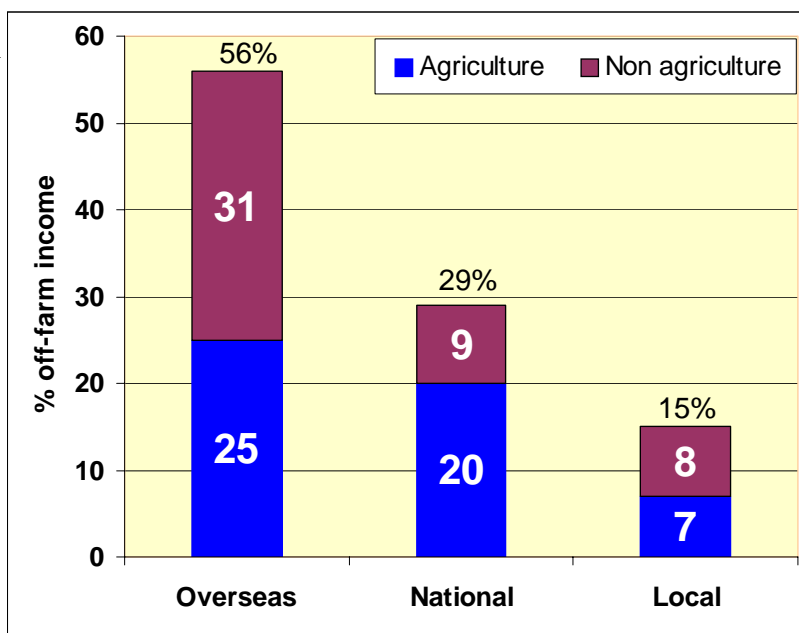
Poverty indicators of different hh groups with different livelihood strategies

Cluster	LLH strategy	Number of cases	Percent in sample	Daily per capita income	Poverty head count %
1	Rainfed crop–livestock strategy	15	3.1	104.1	3.3
2	Mixed crop and off-farm employment	48	9.8	64.8	37.5
3	Livestock-lead strategy	20	4.1	130.4	5.0
4	Small scale mixed crop livestock	120	24.6	61.1	49.2
5	Irrigated crop production	60	12.3	80.8	28.3
6	Crop-lead mixed crop livestock	14	2.9	130.1	7.1
7	Unskilled off farm employment	196	40.2	59.8	54.1
8	Balanced mixed crop livestock	15	3.1	99.3	6.7
Total	All	488	100.0		

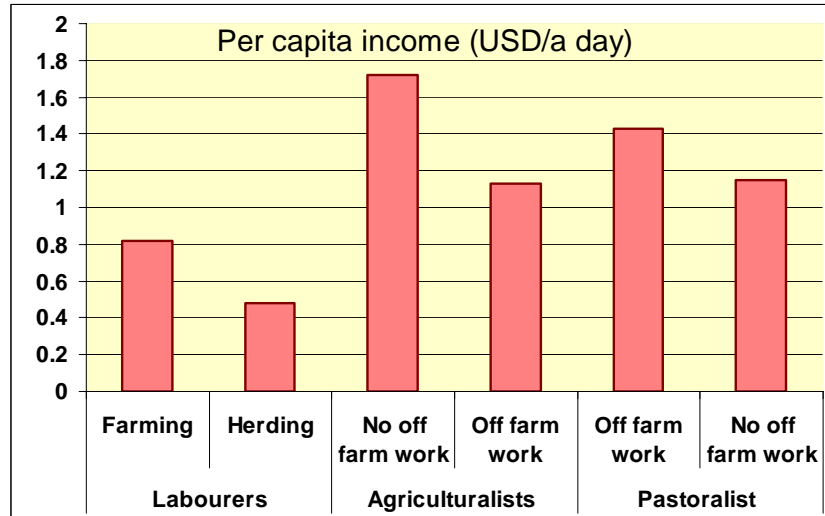
Farm income sources for different household types in Khanasser



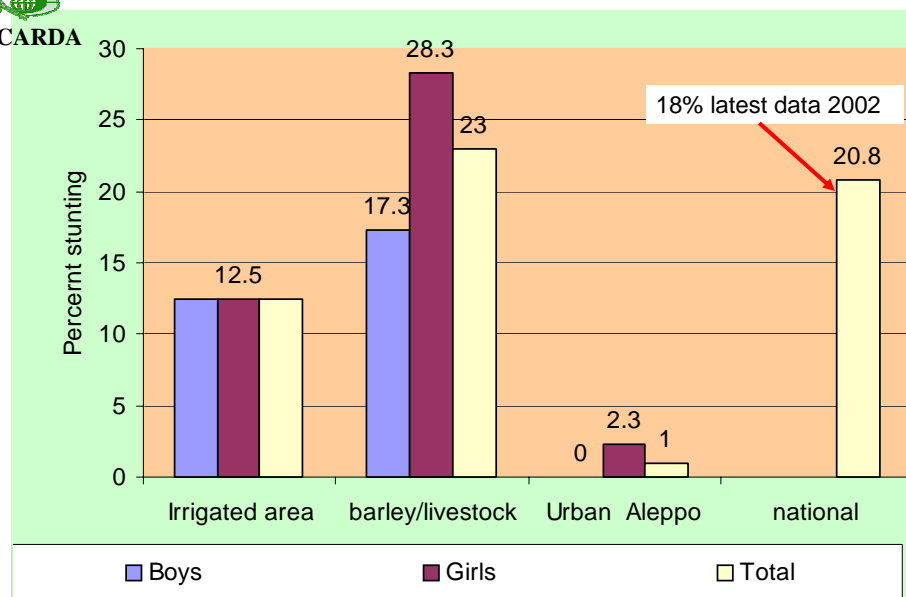
Sources of off-farm income



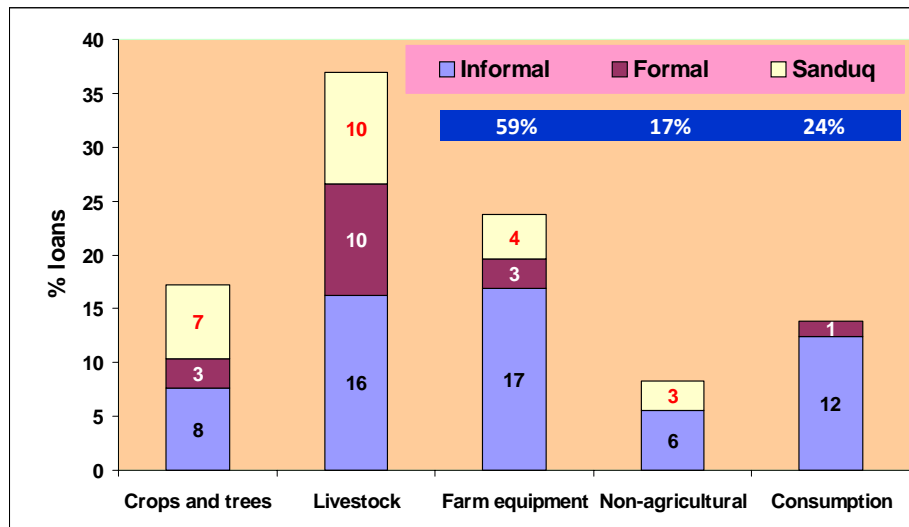
Per capita household income



Livelihood typologies and child nutrition status: stunting



The financial capital Crunch: High demand for private investment



Conclusion

- **Rural households vary in terms of:**
 - Their human, natural, physical, social and financial assets,
 - These determine the livelihood options that they can choose and the consequent welfare outcomes
 - In dry areas, significant number of rural hhs do not rely on agriculture as their main source of living,
 - Characterizing of these livelihood strategies is possible in more systematic and less arbitrary way
 - Clear description of poverty profiles of rural households and their livelihoods sources provides information for targeting development and research



ICARDA

Conclusion cont.

- **Utilize the increasing rural labor surplus:**
 - With factors like:
 - increasing population –declining holding sizes
 - transformation of agriculture (more labor saving technologies- trees, modern irrigation, mechanization);
 - agriculture continues to release surplus labor
- Thus, rural development policies should target to:
 - create opportunities that increase off-farm employment- macro policies
 - create non-farm rural employment
 - labor intensive value chains with high value addition potential



ICARDA

Conclusion cont.

- **Respond to the changing demography (age and gender) of agricultural labor:**
 - The push factors leading to male migration leaving women to dominate agricultural labor and decision-making
 - Clear policies to recognize and develop targeted programs to support the role of rural women is a fundamental development strategy
 - This may include specific programs targeting:
 - women's capacity development
 - Access to knowledge, information and technologies
 - Changing the attitudes and structure of rural development program and extension services



ICARDA

Conclusion cont.

- **Take action on the chronic gap in agr. and rural finance:**
 - The large gap in agricultural finance also indicates that there exist untapped opportunity in increasing agricultural productivity and increasing rural employment with direct and indirect poverty impacts of agriculture
- **Take action on the poor seed supply service:**
 - seed availability also facilitates the adoption of improved technologies which increases the poverty impacts of agricultural research



ICARDA

Conclusion cont

Modernize the the disfunctional extension systems:

- The gap in information and knowledge transfer requires new enterprise-management-based approach of extension services
- The government departments need a complete overhaul of attitudes and update themselves on service oriented role which the NGOs are now taking up.



ICARDA

Conclusion cont.

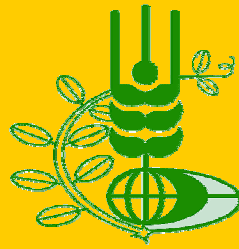
- **Revisit the role and functions of farmer associations:**
 - **Provide relevant support in:**
 - Governance and management
 - Technological innovations, market access, enterprise development, processing technologies, access to finance, accounting and book-keeping, etc.
 - Expanding services to members
 - **Monitor their performance and advice improvement**



ICARDA

Conclusion cont.

- **Consider ESCWA region specific issues:**
 - **Gender** –conservative, mobility, recognition as farmers, etc.
 - Credit- **interest** is not accepted in some communities/individuals
 - Social capital (close social structure):
 - Trust- local capital building through **collective action**.
 - **Water scarcity**-traditional water management based on collective action. → Can be applied in other development aspects
 - Need large scale multi-country program to out-scale the localized experiences



ICARDA

Thank you for your attention