

## International Quinoa Conference 2016:

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# Potential of Quinoa Production in Near East and North Africa Region

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# Background/Introduction

## OVERVIEW OF NENA REGION

### **Key challenges are:**

- Extremely Arid climate
- Scarce Water Resources
- Limited land

# Annual renewable water resources and irrigation water withdrawal

	Renewable water resources*	Water use efficiency ratio		Irrigation water withdrawal		Pressure on water	Pressure on water
	cubic km	percent		cubic km		percent	
		2005/07	2050	2005/07	2050	2005/07	2050
<b>World</b>	42000	50	51	2761	2926	6.6	7.0
<b>Developed countries</b>	14000	41	42	550	560	3.9	4.0
<b>Developing countries</b>	28000	52	53	2211	2366	7.9	8.5
<b>sub-Saharan Africa</b>	3500	25	30	96	133	2.7	3.8
<b>Latin America</b>	13500	42	42	183	214	1.4	1.6
<b>Near East/North Africa</b>	600	56	65	311	325	51.8	54.1
<b>South Asia</b>	2300	58	58	913	896	39.7	38.9
<b>East Asia</b>	8600	49	50	708	799	8.2	9.3

# Total arable land in use: data and projections

	1961/63	2005/07	2005/07	2030	2050	1961-2007	1991-2007	2005/07-2050
	million ha					percent p.a.		
<b>World</b>	1372	1548	1592	1645	1661	0.28	0.13	0.10
<b>Developed countries</b>	678	624	624	608	586	-0.17	-0.51	-0.14
<b>Developing countries</b>	693	923	968	1036	1075	0.65	0.60	0.24
<b>idem excl. China and India</b>	427	604	668	734	775	0.74	0.70	0.34
<b>sub-Saharan Africa</b>	133	200	240	266	291	0.83	1.25	0.51
<b>Latin America</b>	105	167	202	235	251	0.98	0.61	0.49
<b>Near East/North Africa</b>	86	97	84	84	84	0.31	-0.17	0.00
<b>South Asia</b>	191	204	206	210	213	0.14	0.06	0.08
<b>East Asia</b>	178	255	236	241	236	0.03	0.87	0.00

# Over exploitation of water-Problem of Salinity in Oman



# Average grain yield (ton/ha) over years

	Algeria	Egypt	Iran	Iraq	Lebanon	Mauritania	Sudan	Yemen
Titicaca			3.367	1.270	3.000	1.380	4.500	2.100
Giza 1	0.616	1.396		1.080	3.500		0.953	1.700
Giza 2		1.374					0.473	
Santa Maria	0.340	0.989			1.100	1.037	4.120	0.620
Sajama	0.709	0.846			0.800	0.678		0.870
Q12	0.739	2.144	1.646	0.372	4.017	0.909	2.170	1.400
Q18	0.696	2.188	1.204	0.364	4.000	1.109	1.937	0.930
Q19		2.174	0.590	0.118	2.735	0.829		1.100
Q21	0.515	1.597	1.406	0.423	4.158	1.238	1.690	0.955
Q22	0.277	2.504	0.988	0.471	2.517	0.800	1.820	1.680
Q26	0.668	2.795	0.897	0.332	3.285	1.151	2.393	1.710
Q27	0.732	3.180	0.595	0.338	4.350	0.973	1.545	1.550
Q29	0.607	1.774	0.500	0.348	3.233	1.459	0.285	0.900
Q31		2.386	0.956	0.242		1.049	1.200	1.420
Amarilla Marangani		0.834				0.090	2.157	2.100

Quinoa fields top left Iran, Mauritania right, Bottom left Lebanon and Iraq



# Quinoa field Lebanon Left and Mauritania right



# Germination Test 2015

Genotype	Iraq*	Mauritania	Sudan
Titicaca	10**	26	12
Giza 1	16**	NA	10
Giza 2	NA	NA	16
Santa Maria	NA	18	NA
Sajama	NA	0	NA
Q12	14	10	14
Q18	16	18	24
Q19	8	8	NA
Q21	6	32	18
Q22	14	16	18
Q26	10	18	26
Q27	18	22	20
Q29	8	36	22
Q31	10	32	NA
Amarilla Marangani	NA	0	6
Q32	10	32	10

# Seed Multiplication

- Field evaluations resulted in identification of at least 2-3 promising varieties by each country.
- All the countries are scaling up the identified varieties both at farmers' fields as well as at research centers, to involve more farmers in Quinoa production

# Quinoa Seeds produced during 2016

Countries	Seed produced (Kgs)	
	At Research Centres	At farmers' Fields
Algeria	200	-
Egypt	290	01 ton
Iran	825	50 kgs
Lebanon	430	-
Yemen	200	-
<b>Total</b>	<b>2195</b>	<b>1.050</b>

# Quinoa Production by small farmers and Private sector

- Six private companies and 20 farmers involved in Quinoa production in Egypt
- Lebanon and Iran on a limited scale with 1 - 2 farmers
- Both in Algeria and Yemen, no demand at all for Quinoa products

# Quinoa Marketing in Various Countries

- quinoa marketing quite developed in some countries
- Lebanon imported in 2014-15 around 100 MT, while Egypt's import did not exceed 15 MT
- Quinoa in Lebanon is 17 times more expensive than rice and 13 to 22 times more expensive than burghol
- Price of one kg of Quinoa varies from 15-20 USD in market
- Quinoa eaters in Lebanon fall in the higher income brackets

# In Egypt

- In Egypt, local Quinoa traders exploit small-scale farmers due to small produce along with limited capacities in processing Quinoa
  - Traders purchase locally produced Quinoa at 2-3 USD per kg and sell at around USD 8 per kg
- While imported Quinoa is sold at 12-15 USD.
- Six private companies are producing Quinoa products and applied for registration with government

# Conclusions

- Successful Quinoa Production possible in RNE countries
- Higher yields do not guarantee Quinoa success in the region Unless fits in the current cropping patterns, farming systems and market opportunities
- With the exception of Lebanon and Egypt, yet no demand in Algeria, Iran, and Yemen
- Quinoa in October-November competing with wheat/barley In mountainous areas in April/May, competes with offseason vegetables production

# Conclusions

- Quinoa could never compete/replace wheat and barley
- Planted in the marginal areas affected by salinity and alkalinity  
Conducive governments policies
- capacity development
- Improved Quinoa varieties seeds
- Awareness Creation