

The food security and water insecurity paradox in Iran; the case of feed production-feed import- irrigation water consumption nexus

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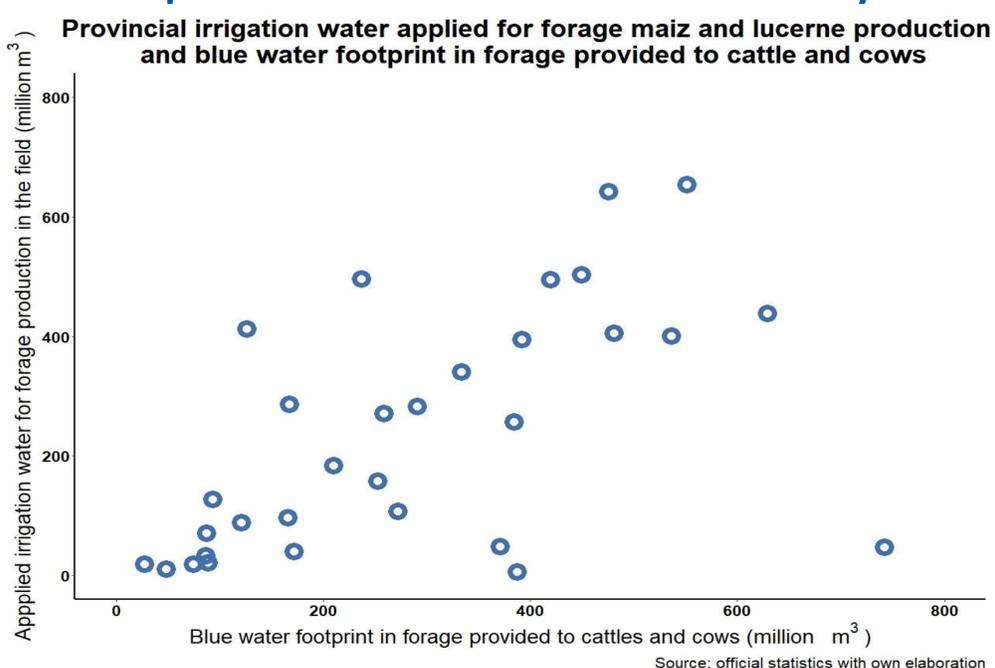
Introduction

- The general agriculture's policy of Iran is pushing for the self-sufficiency of the main feed items.
- Forage crops have relatively high irrigation water requirements.
- The official plan of increasing forage production threat the already endangered groundwater resources more
- The nexus concept is applied which has been developed to analyse nexus-related interlinkages

Material and methods

- The nexus concept of food-water-environmental degradation has been applied.
- The countrywide provincial available data are used by focusing on two different aspects:
 - Red meat and dairy production
 - The nexus between forage crop production, feed import and irrigation water consumption
 - Groundwater degradation at provincial level
- We estimate the water requirements by applying the available data on water footprint of forage crops and regional irrigation water data on forage crops

Water footprint in forage production and consumption distribution around the country



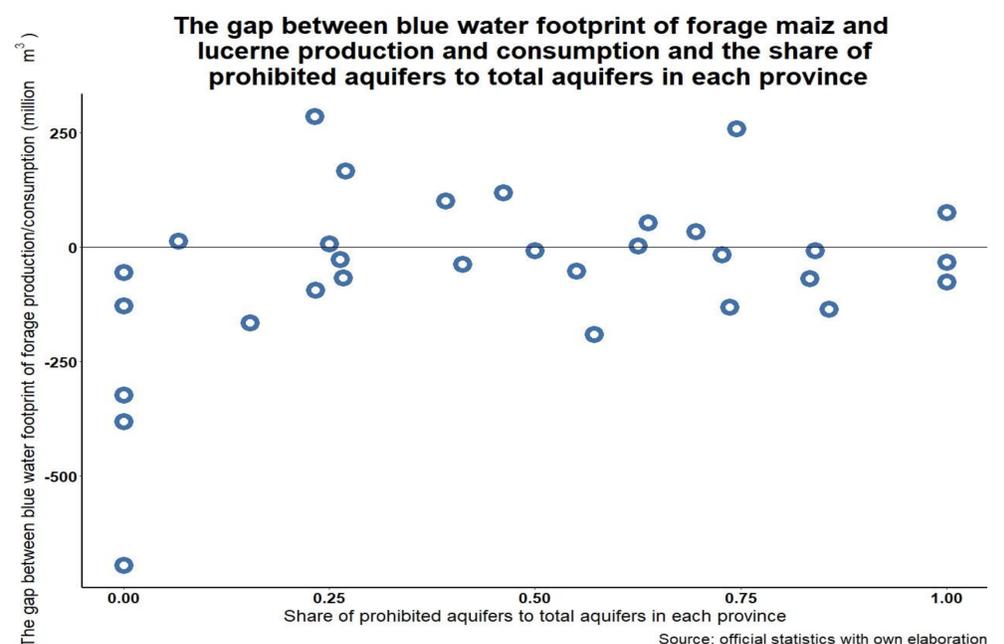
- There is uneven distribution countrywide between forage production and its water requirement and the centres of beef production and water needed for feed provision

Table of country condition on red meat and fodder crop production and import (2018)

Index	Value (Unit)
Population	83.000.000
Red meat production	829.000 Tonnes
<i>Cow, calve, bull:</i>	474.000 Tonnes
<i>Sheep, goat:</i>	349.000 Tonnes
Cow, calve, bull	8.088.245 (heads)
Sheep, goat	45.621.950 (heads)
Forage production	
Alfalfa / Lucerne	6.466.956 Tonnes
Forage Maize	10.662.005 Tonnes
Meat import	Cow, calve, bull: 97.000 Tonnes Sheep, goat: 36.000 Tonnes
Fodder import	Alfaalfa: < 1.000.000 Tonnes Forage Maize: 8.000.000 Tonnes

Source: Ministry of Agriculture Jihad of Islamic Republic of Iran, Statistical Centre of Iran (SCI)

The unreasonable relation between the region of meat and forage production and their groundwater resources deterioration is obvious



Conclusion

- In many provinces the total water requirement for production of forage crops threatens the groundwater resources.
- The provincial policy of importing the required forage crops should be consider seriously, if the self-sufficiency policy of the main feed items or beef is on the agenda.

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