# Monitoring system for the PRIMA initiative

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# THE FRAMEWORK

The research and innovation activities that will be implemented in the context of PRIMA initiative have to attain clear evidence of tangible, measurable and sustainable impact.

The Sustainable Development Goals (SDGs) are the compass for the Impact Assessment and the Monitoring tools of the PRIMA initiative.

# SDGs ON FOOD AND WATER

SDGs (among the 17) include two specific goals:

#2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

#6 Ensure availability and sustainable management of water and sanitation for all)

BUT we aim at a global improvement of countries towards SDGs: most of them have to be “covered”

# SELECTION OF INDICATORS

Indicators should:

- cover most of SDGs
- consider biophysical limits
- consider the *nexus*
- consider both national and sectoral systems
- be limited in number (12)

# SELECTED INDICATORS

1. Multidimensional Poverty Index
2. Population overweight (%)
3. Land use (%)
4. GHG emissions (total and AFOLU - $tCO_2e$)

5. Cereal Yield (kg/ha)
6. Agricultural Value Added (US$/ worker)

7. Fertilizers consumption (kg/ha arable land)
8. Crop water productivity ($kg/m^3$)
9. Proportion of total water use (%)
10. Pop. using safely managed water services (rural, %)
11. Pop. using safely managed sanitation serv. (rural, %)

12. Amount of agricultural residues used for energy purpose (t)

# SELECTED INDICATORS

1. Multidimensional Poverty Index [Alkire et al., 2014 & 2015]
2. Population overweight [WHO]
3. Land use (%) [WB]
4. GHG emissions (total and AFOLU - $tCO_2e$) [UNFCCC]
5. Cereal Yield (kg/ha) [WB]
6. Agricultural Value Added (US$/ worker) [WB]
7. Fertilizers consumption (kg/ha arable land) [FAO, WB]
8. Crop water productivity ($kg/m^3$) [Sander, 2010]
9. Proportion of total water use (%) [UNSTAT MDG]
10. Pop. using safely managed water services (rural, %) [UNSTAT MDG]
11. Pop. using safely managed sanitation serv. (rural, %) [UNSTAT MDG]
12. Amount of agricultural residues used for energy purpose (t) [???]

# SDGs VS. PRIMA INDICATORS

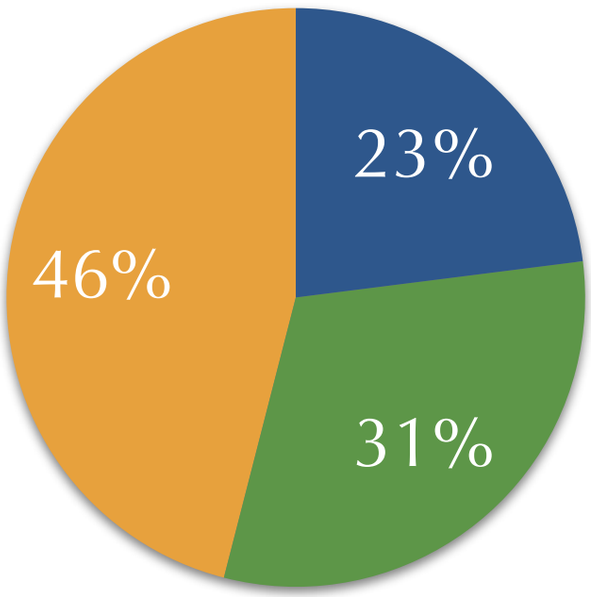
| S.D. GOAL ↓ / INDICATOR → | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. No poverty | ■ | | | | | ■ | | | ■ | | | |
| 2. Food security and sust. agriculture | | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| 3. Good health & well-being | ■ | ■ | | ■ | | ■ | | | ■ | ■ | ■ | ■ |
| 6. Clean water and sanitation | | | | | | | | ■ | ■ | ■ | ■ | ■ |
| 7. Affordable and green energy | | | ■ | | | | | | | | | ■ |
| 8. Decent work and economic growth | ■ | | | | | ■ | | | | | | |
| 10. Reduce inequalities | ■ | | | | | ■ | | | | ■ | ■ | ■ |
| 11. Sustainable communities | ■ | ■ | ■ | | ■ | ■ | | ■ | ■ | ■ | ■ | ■ |
| 12. Sustain. consumption & production | | ■ | ■ | | ■ | ■ | | ■ | ■ | | | |
| 13. Climate action | | ■ | ■ | | | | ■ | | | | | |
| 14. Sustainable management of oceans | | ■ | | | | | ■ | | | | | |
| 15. Sustainable land use, forests, etc | | ■ | ■ | | ■ | | | ■ | | | | |

# BASELINE OF PRIMA INDICATORS

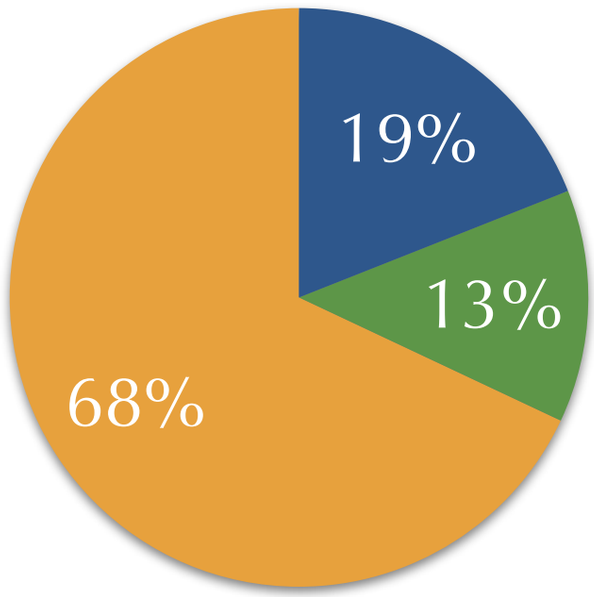
| | Multidim. Poverty Index (MPI) | Pop. overweight % | Cereal Yield kg/ha | Agr. value added per worker 2005US$ | Fertilizer use kg/ha arab. land | Crop water productiv. kg/m3 | Proportion of total water use % | Safe water service (rural) % | Safe sanitation service (rural) % |
|---|---|---|---|---|---|---|---|---|---|
| Albania | 0,005 | 52,7 | 4606,0 | 3614,0 | 87,5 | 1,09 | 4,3 | 95,0 | 90,0 |
| Algeria | n.a. | 59,1 | 1814,0 | 4470,0 | 15,3 | 0,72 | 48,9 | 82,0 | 82,0 |
| Bosnia and | 0,002 | 51,8 | 4027,0 | n.a. | 91,4 | 1,04 | 0,9 | 100,0 | 92,0 |
| Croatia | n.a. | 58,8 | 5451,0 | 24913,0 | 234,9 | 0,98 | 0,6 | 100,0 | 96,0 |
| Cyprus | 0,108 | 60,3 | 1710,0 | 13906,0 | 199,8 | n.a | 17,6 | 100,0 | 100,0 |
| Egypt, Arab Rep. | 0,014 | 62,0 | 7253,0 | 2562,0 | 636,4 | 1,22 | 97,8 | 99,0 | 93,0 |
| France | 0,084 | 60,7 | 7074,0 | 84574,0 | 140,6 | 1,42 | 14,8 | 100,0 | 99,0 |
| Greece | 0,121 | 60,5 | 4481,0 | 18602,0 | 157,4 | 1,05 | 13,8 | 100,0 | 98,0 |
| Israel | n.a. | 63,5 | 3797,0 | n.a. | 268,7 | 1,01 | 79,7 | 100,0 | 100,0 |
| Italy | 0,096 | 58,8 | 5229,0 | 52519,0 | 129,0 | 1,21 | 23,6 | 100,0 | 100,0 |
| Lebanon | n.a. | 68,7 | 3382,0 | 48067,0 | 456,5 | 0,62 | 24,3 | 99,0 | 81,0 |
| Libya | 0,006 | 68,7 | 833,0 | n.a. | 4,3 | 0,74 | 615,4 | 68,0 | 96,0 |
| Malta | 0,089 | 64,0 | 5151,0 | n.a. | 397,1 | n.a. | 67,3 | 100,0 | 100,0 |
| Montenegro | 0,001 | 55,8 | 2844,0 | 6939,0 | 324,7 | 1,06 | n.a. | 99,0 | 92,0 |
| Morocco | 0,067 | 56,5 | 1828,0 | 4600,0 | 52,4 | 0,82 | 35,7 | 65,0 | 66,0 |
| Palestine | 0,006 | n.a. | 1583,0 | 2278,0 | n.a. | n.a. | 48,7 | 82,0 | 90,0 |
| Slovenia | 0,054 | 60,6 | 4610,0 | 166068,0 | 267,4 | n.a. | 3,0 | 99,0 | 99,0 |
| Spain | 0,100 | 60,9 | 4081,0 | 41740,0 | 139,2 | 0,91 | 28,6 | 100,0 | 100,0 |
| Syrian Arab | 0,016 | 58,5 | 1576,0 | n.a. | 21,3 | 0,67 | 84,2 | 87,0 | 95,0 |
| Tunisia | 0,004 | 62,9 | 1691,0 | 4524,0 | 41,1 | 0,95 | 69,7 | 93,0 | 80,0 |
| Turkey | n.a. | 66,3 | 3249,0 | 6855,0 | 113,5 | 0,64 | 18,9 | 100,0 | 86,0 |
| *Portugal* | 0,166 | 55,6 | 4183,0 | 9659,0 | 150,3 | 1,07 | 10,9 | 100,0 | 100,0 |
| *Jordan* | 0,006 | 65,9 | 1678,0 | 4848,0 | 681,9 | 0,51 | 92,4 | 92,0 | 99,0 |
| *Macedonia, FYR* | 0,002 | 55,2 | 3381,0 | 11460,0 | 69,2 | 0,94 | 16,1 | n.a | n.a. |

# LAND USE

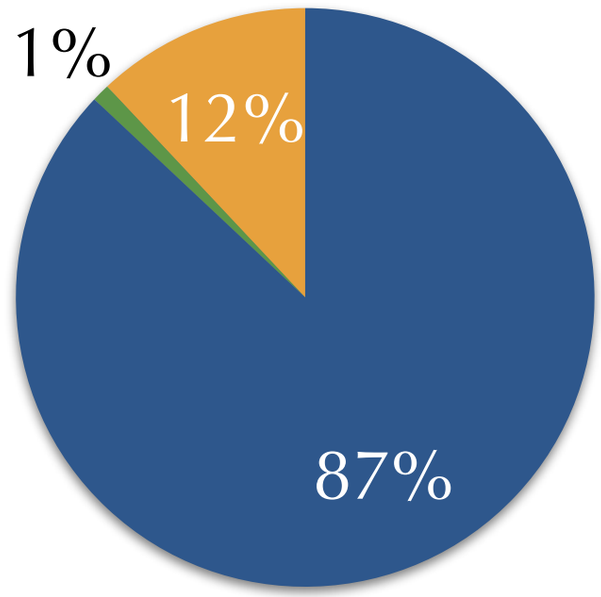
## Italy




## Morocco

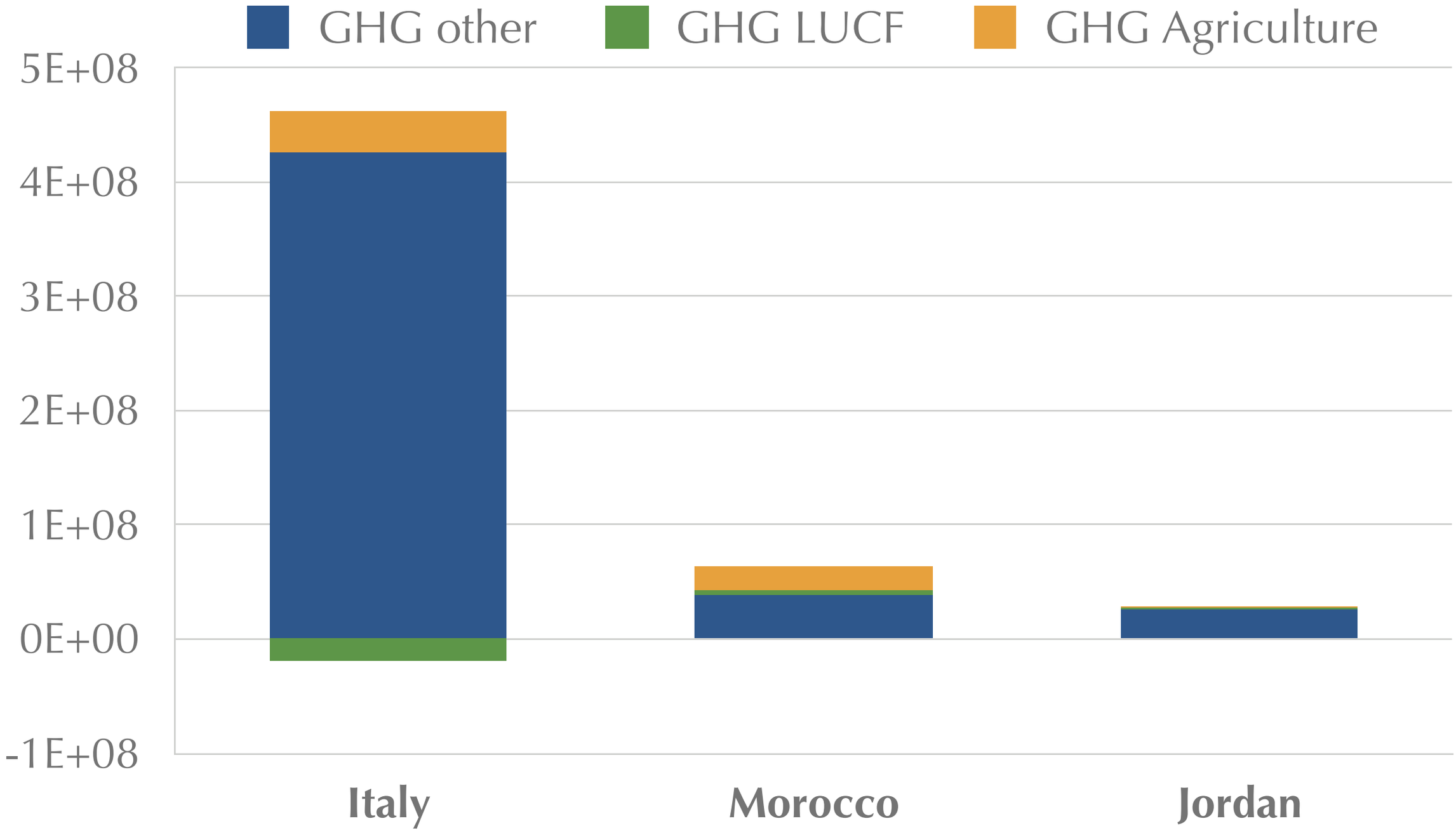



## Jordan

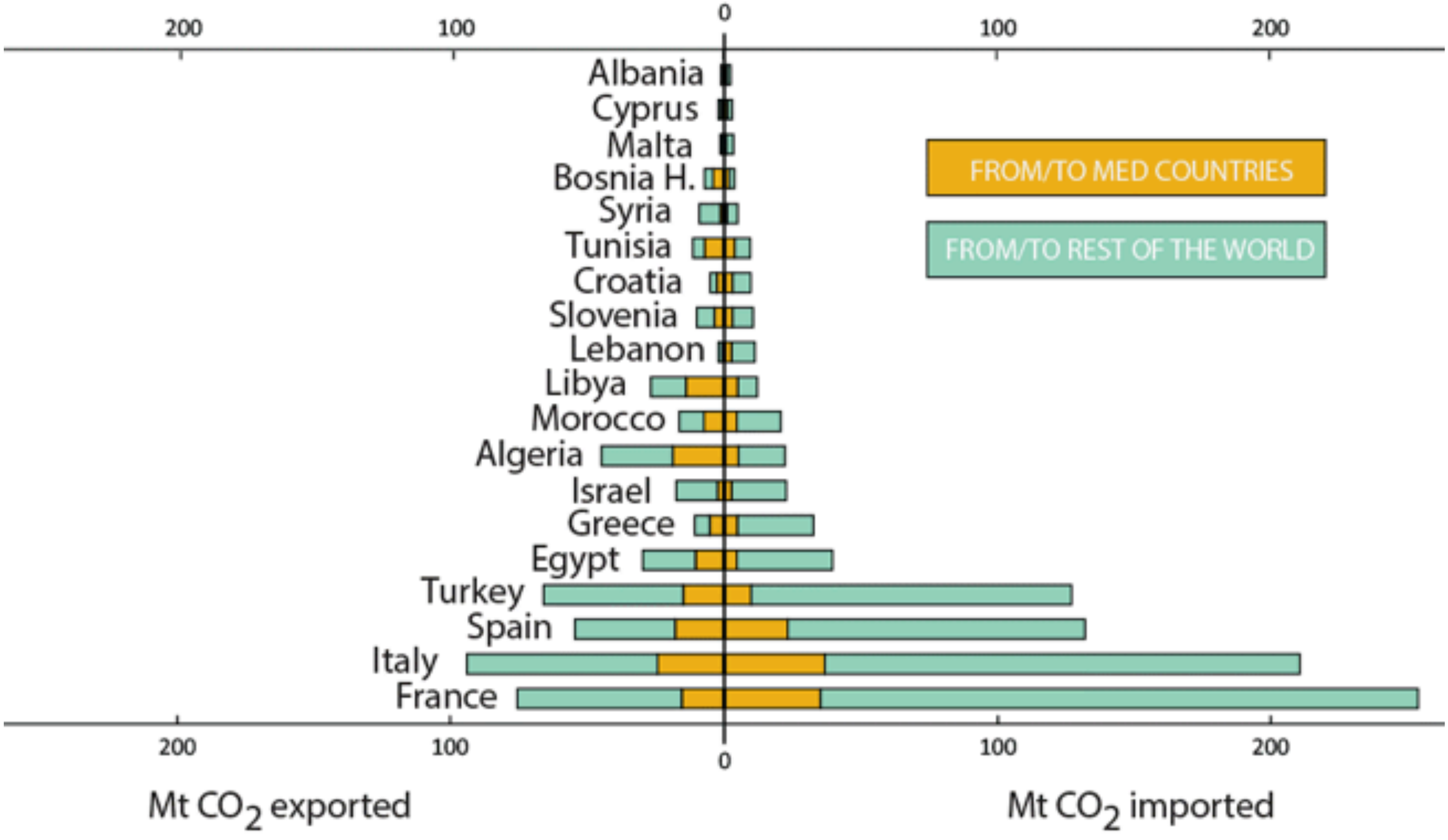



Other  Forest  Agriculture

# GHG EMISSIONS (t $CO_2e$)



# GHGs FLOWS "HIDDEN" IN TRADE



# AGRICULTURAL RESIDUES FOR BIOENERGY

PRIMA

- Important for the food-energy nexus

- Relevant especially for the development of the North-African countries

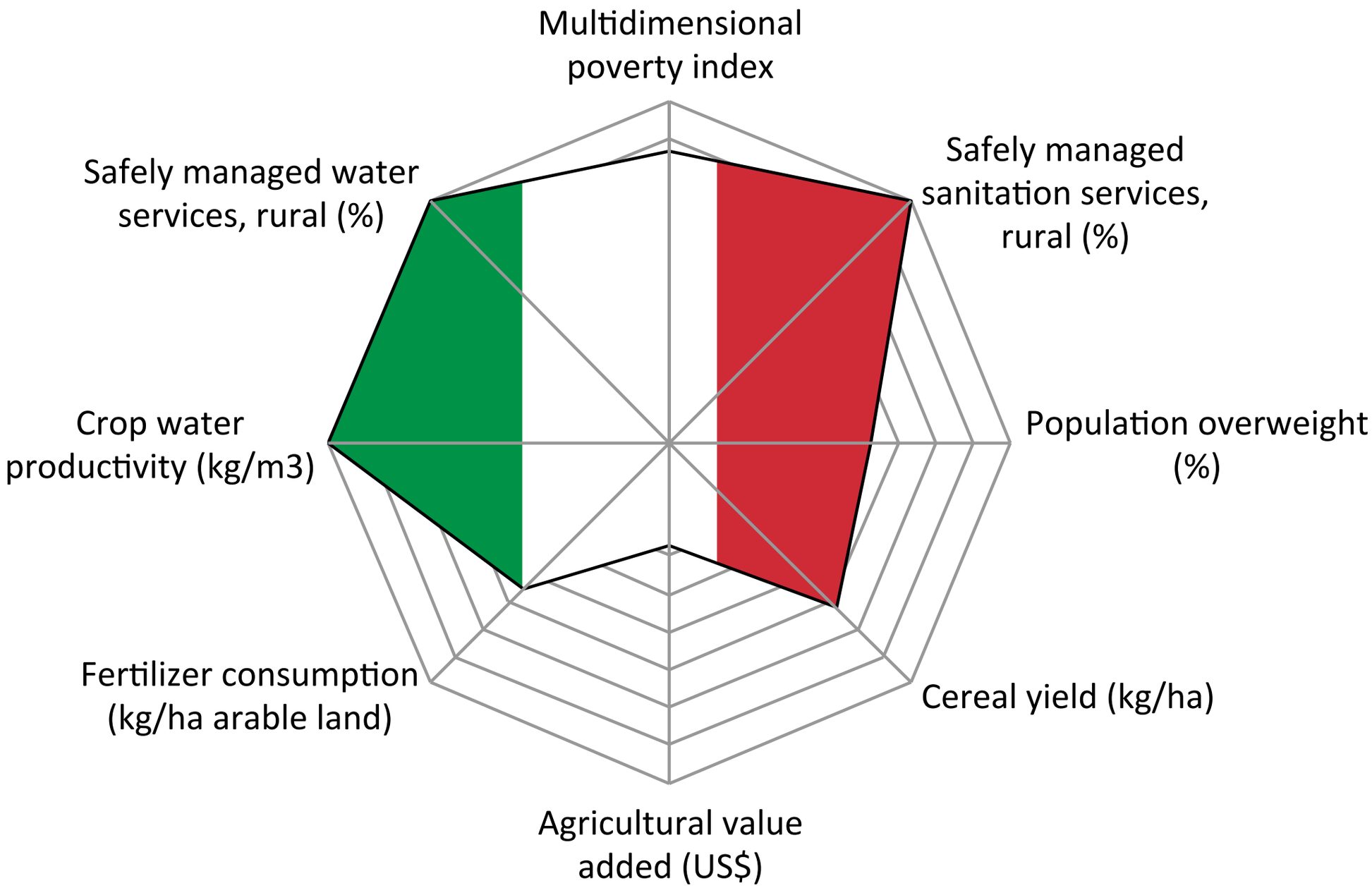
- Morocco: 14.6 million t/year of cattle manure

- Olive, corn, rice, etc. are important sources of bioresidues that could be converted into biogas or bioethanol

- HELP: DATA NEEDED!!!

# RADAR DIAGRAM (Amoeba)

## Italy



# CONCLUSION

- The list of indicator is not definitive but for these (-1) we have a reliable baseline

- An indicator on land degradation or soil erosion may be important (FAO data updated hardly at 2008)

- Indicators should be used more to monitor countries' development in time than for comparison among them