

Bioenergy and Food Security Integrating needs across sectors to achieve sustainable potential

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Linkages: Bioenergy and Food Security



Agriculture Sector and Food Security

Which options can be viable?

To be defined:

Bioenergy and Food Security Approach of FAO

Integrate Agriculture and Energy www.fao.org/energy BEFS

The BEFS Bioenergy Assessment: Steps

BIOENERGY SUPPLY CHAINS



BEFS

The BEFS Assessment: Analysis blocks

\$0

14

15

16

17

Energy Potential (MJ/kg)

BEFS Assessment





19

20

18

Results

Governorate	Electricity Capacity (MW)									Total
	Citrus pruning	Olive pruning	Palm date pruning	Cotton stalk	Sugarcan e bagasse	Grapes	Sunflowe r stalk	Maize stalk	Rice straw	Capacity Region (MW)
Sharkia	4.88	0.3	0.6	9.3		0.3		31.2	24.5	71.0
Dakahlia	0.37		1.00	9.9	0.2	0.8		9.8	42.7	63.6
Kafr_El Sheikh	0.36		0.99	21.1	-			9.2	28.8	60.5
Menia	0.40		-	0.3	14.0	3.0	0.4	33.3		51.3
Qena					42.7			7.2		49.9
Aswan			2.0		29.8			1.9		33.7
Menoufia	3.08	0.6		0.7	-	1.8		24.9		31.0
Gharbia	1.04		-	3.7	0.5	1.6		10.7	13.9	31.5
Beni Suef	0.51	0.3	-	1.4	0.2	0.8		26.1		29.2
Luxor					22.8			2.9		25.7
Fayoum	0.45	2.7	0.2	4.0	0.2	0.2	0.5	16.7		24.9
Suhag	-		0.1	0.4	5.8			18.2		24.4
Assuit	1.03	0.41	0.67	1.1	0.6	0.4	0.4	19.0		23.6
Giza	1.25	1.0	1.9		0.7	0.9	0.1	9.7		15.5
Qalyoubla	3.14				0.2			8.2	1.5	13.0
Ismailia	2.59	2.3	0.4	0.3	-	0.3		4.8	0.5	11.2
North Sinai	0.41	4.6	3.5							8.6
Damietta	-		0.3	1.5					6.7	8.4
Alexandria				1.3				5.6		6.8
New Valley	0.28	0.47	2.65					2.2	0.7	6.3
Matruh		3.97	1.24			0.6				5.7
Port Said	-			0.5					2.1	2.6
South Sinai		1.58								1.5
Cairo		1.09	0.15							1.2
Suez	0.33	0.3								0.6
Red sea	-									

Potentially profitable options and possible plant locations



Synergies and opportunities



Source: Elaboration based on BEFS Assessment Results

To note....

Rwanda

The National Domestic Biogas Program of Rwanda (NDBP)

- In 2008 became operational, targeting 15 000 family-sized biogas plants by 2011.
- This target was downscaled to 5 000 in 2009 and to 3 000 in 2010
- By 2012 only around 1 800 digesters that were spread across 30 districts had been built.



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Enough manure and water available?



Maintenance or construction material issues?



Low biogas production rates?

BEFS

In conclusion.....

- Bioenergy solutions are **country and case specific**
- Feedstock options need to be assessed in detail and need to consider the agriculture and context setting (environment, social, energy, etc.)
- All logistics around the sourcing of the biomass need to be integrated into the system, considering a biomass supply chain, to enable stable supply of the biomass to the bioenergy production centre
- Bioenergy technologies need to be screened against possible renewable energy technologies to ensure sustainability, to enable the potential, meet energy needs, integrate farmers and rural communities into the systems

...www/fao.org/energy