



LOS ESPERANZA
ra hoy:
QUESOS
• Mandazgo
• Queso de Anchoa
• Anchoa
• Queso Seco
• Queso de Anchoa
• Queso de Anchoa
• Queso de Anchoa
• Queso de Anchoa
• Queso de Anchoa

PRODUCT Catalogue

 **SISTEMA.bio**
CREATING VALUE FROM WASTE

Our products

Sistema.bio is a hermetic hybrid reactor that receives the daily waste of a farm, in which the manure mixed with water is fermented, producing biogas that is conducted through pipes to the points of use. At the other end of the system comes a powerful biofertilizer.



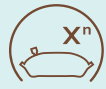
Durability



Pre-Fabricated kit



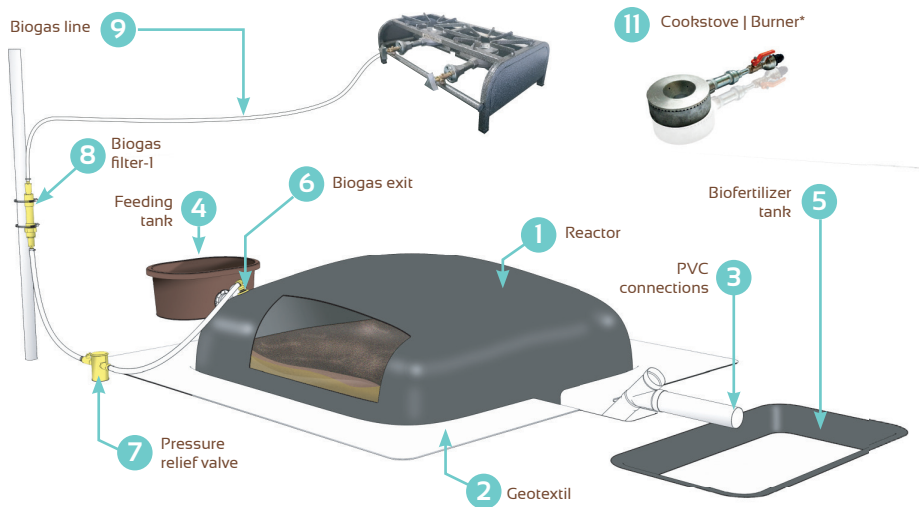
Variety of sizes



Modular



Easy operation & maintenance



* Stove availability according to region | Sistema 6 only sold with cookstove, does not include burner

Same technology, different sizes

Sistema 6



Sistema 12



Sistema 20



Sistema 6

WEATHER

Temperate
(15°C to 23°C)

Warm
(>23°C)

Cold
(10°C to 15°C)

If you have

 **Cows**
(fully confined)

2

2

1

What goes in (daily)

 **Buckets
of waste**
17L

2

3

1.5

 **Buckets
of water**
17L

4

6

3

What goes out (daily)

 **Hours of
biogas***

2.5

3.3

1.7

 **Liters of
biofertilizer**

105

135

75



Stove

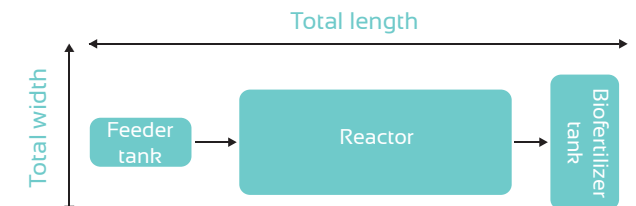
Stove availability according to region



Total Area Required

Total length (m)	Total width (m)	Total depth (m)**
7.8	4.0	0.9

**Total depth= 1 m for cold climate













Sistema 6






*The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.

NOTES:

- Sheeps/goats waste should always be moistened for 12 to 24 hours.
- Contact us for chickens in cold climate areas (10°C to 15°C).

		WEATHER		
		Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have				
 Pigs	16	19	10	
What goes in (daily)				
 Buckets of waste 17L	1.5	2	1	
 Buckets of water 17L	5	6	3.5	
What goes out (daily)				
 Hours of biogas*	3	3.7	1.8	
 Liters of biofertilizer	113	135	72	

		WEATHER		
		Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have				
 Sheeps/ Goats	27	37	18	
What goes in (daily)				
 Buckets of waste 17L	2	2.2	1.1	
 Buckets of water 17L	4.8	6.5	3.2	
What goes out (daily)				
 Hours of biogas*	1.7	2.4	1.1	
 Liters of biofertilizer	109	147	73	

		WEATHER	
		Temperate (15°C to 23°C)	Warm (>23°C)
If you have			
 Chickens	196	250	
What goes in (daily)			
 Buckets of waste 17L	1	1.5	
 Buckets of water 17L	3	3.7	
What goes out (daily)			
 Hours of biogas*	4	5	
 Liters of biofertilizer	69	88	

Sistema 8

WEATHER

Temperate
(15°C to 23°C)

Warm
(>23°C)

Cold
(10°C to 15°C)

If you have

 **Cows**
(fully confined)

3

3

2

What goes in (daily)

 **Buckets
of waste**
17L

3

4

2

 **Buckets
of water**
17L

6

8

4

What goes out (daily)

 **Hours of
biogas***

3.6

4.9

2.3

 **Liters of
biofertilizer**

150

195

105



Stove

Stove availability according to region

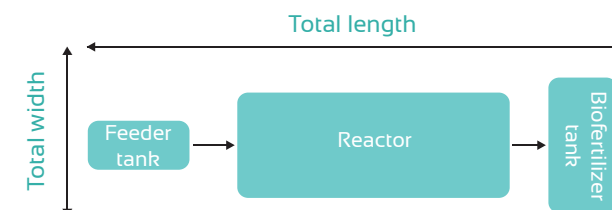


Burner

Total Area Required

Total length (m)	Total width (m)	Total depth (m)**
8.5	4.0	0.9

**Total depth= 1 m for cold climate













Sistema 8




*The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.

NOTES:

- Sheeps/goats waste should always be moistened for 12 to 24 hours.
- Contact us for chickens in cold climate areas (10°C to 15°C).

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Pigs	22	25	14
What goes in (daily)			
 Buckets of waste 17L	2	2.5	1.5
 Buckets of water 17L	7	9	5.5
What goes out (daily)			
 Hours of biogas*	4.3	5	2.5
 Liters of biofertilizer	158	180	99

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Sheeps/ Goats	37	50	25
What goes in (daily)			
 Buckets of waste 17L	2	3	1
 Buckets of water 17L	7	9	4
What goes out (daily)			
 Hours of biogas*	2.3	3.2	1.4
 Liters of biofertilizer	149	200	100

	WEATHER	
	Temperate (15°C to 23°C)	Warm (>23°C)
If you have		
 Chickens	250	350
What goes in (daily)		
 Buckets of waste 17L	1.5	2
 Buckets of water 17L	4	5
What goes out (daily)		
 Hours of biogas*	5	7
 Liters of biofertilizer	88	123

Sistema 12

WEATHER

Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
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If you have

 **Cows**
(fully confined)

3

3

2

What goes in (daily)

 **Buckets
of waste**
17L

4

5

2

 **Buckets
of water**
17L

8

10

4

What goes out (daily)

 **Hours of
biogas***

4.7

6.6

2.3

 **Liters of
biofertilizer**

195

270

105



Stove

Stove availability according to region

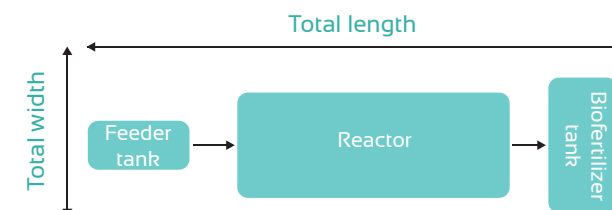


Burner

Total Area Required

Total length (m)	Total width (m)	Total depth (m)**
9.5	4.0	0.9

**Total depth= 1 m for cold climate













Sistema 12






*The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.

NOTES:

- Sheeps/goats waste should always be moistened for 12 to 24 hours.
- Contact us for chickens in cold climate areas (10°C to 15°C).

		WEATHER		
		Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have				
 Pigs	28	38	19	
What goes in (daily)				
 Buckets of waste 17L	3	3.5	2.5	
 Buckets of water 17L	10	13	9	
What goes out (daily)				
 Hours of biogas*	5.5	7.5	3.4	
 Liters of biofertilizer	203	270	135	

		WEATHER		
		Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have				
 Sheeps/ Goats	50	67	33	
What goes in (daily)				
 Buckets of waste 17L	3	4	2	
 Buckets of water 17L	9	12	6	
What goes out (daily)				
 Hours of biogas*	3.1	4.3	1.9	
 Liters of biofertilizer	199	267	133	

		WEATHER	
		Temperate (15°C to 23°C)	Warm (>23°C)
If you have			
 Chickens	350	500	
What goes in (daily)			
 Buckets of waste 17L	2	3	
 Buckets of water 17L	5	7.5	
What goes out (daily)			
 Hours of biogas*	7	10	
 Liters of biofertilizer	123	175	

Sistema 16

WEATHER

Temperate
(15°C to 23°C)

Warm
(>23°C)

Cold
(10°C to 15°C)

If you have

 **Cows**
(fully confined)

5

7

3

What goes in (daily)

 **Buckets
of waste**
17L

6

8

4

 **Buckets
of water**
17L

12

16

8

What goes out (daily)

 **Hours of
biogas***

7.2

9.6

4.3

 **Liters of
biofertilizer**

300

390

195



Stove



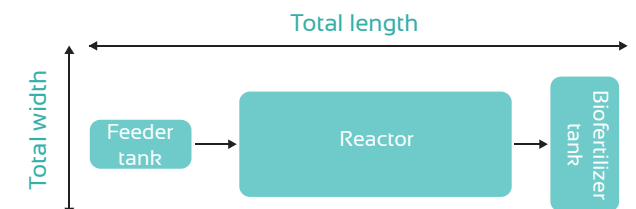
Burner

Stove availability according to region

Total Area Required

Total length (m)	Total width (m)	Total depth (m)**
11.5	4.0	0.9

**Total depth= 1 m for cold climate













Sistema 16





*The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.

NOTES:

- Sheeps/goats waste should always be moistened for 12 to 24 hours.
- Contact us for chickens in cold climate areas (10°C to 15°C).

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Pigs	41	50	28
What goes in (daily)			
 Buckets of waste 17L	4	5	3
 Buckets of water 17L	14	16	11
What goes out (daily)			
 Hours of biogas*	7.9	10	5.1
 Liters of biofertilizer	293	360	203

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Sheeps/ Goats	75	100	50
What goes in (daily)			
 Buckets of waste 17L	4	6	3
 Buckets of water 17L	13	18	9
What goes out (daily)			
 Hours of biogas*	4.7	6.4	2.9
 Liters of biofertilizer	299	401	200

	WEATHER	
	Temperate (15°C to 23°C)	Warm (>23°C)
If you have		
 Chickens	550	700
What goes in (daily)		
 Buckets of waste 17L	3	4
 Buckets of water 17L	8	10
What goes out (daily)		
 Hours of biogas*	11	14
 Liters of biofertilizer	193	245

Sistema 20

WEATHER

Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
------------------------------------	------------------------	-------------------------------

If you have



7

9

5

What goes in (daily)



8

11

5



16

22

10

What goes out (daily)



9.7

13.2

6.0



405

540

270



Stove

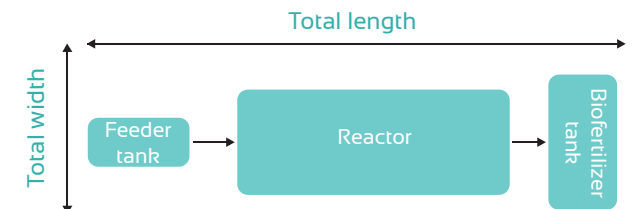


Burner

Stove availability according to region

Total Area Required		
Total length (m)	Total width (m)	Total depth (m)**
15.0	4.0	0.9

**Total depth= 1 m for cold climate













Sistema 20






*The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.

NOTES:

- Sheeps/goats waste should always be moistened for 12 to 24 hours.
- Contact us for chickens in cold climate areas (10°C to 15°C).

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Pigs	56	75	38
What goes in (daily)			
 Buckets of waste 17L	6	7	3.5
 Buckets of water 17L	20	25	12
What goes out (daily)			
 Hours of biogas*	11	15	6.7
 Liters of biofertilizer	405	540	270

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Sheeps/ Goats	100	134	67
What goes in (daily)			
 Buckets of waste 17L	6	8	4
 Buckets of water 17L	18	24	12
What goes out (daily)			
 Hours of biogas*	6.2	8.5	3.9
 Liters of biofertilizer	398	534	267

	WEATHER	
	Temperate (15°C to 23°C)	Warm (>23°C)
If you have		
 Chickens	700	950
What goes in (daily)		
 Buckets of waste 17L	4	5.5
 Buckets of water 17L	10	13.89
What goes out (daily)		
 Hours of biogas*	14	19
 Liters of biofertilizer	245	332

Sistema 30

WEATHER

Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
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If you have

 **Cows**
(fully confined)

10	13	7
----	----	---

What goes in (daily)

 **Buckets of waste**
17L

12	15	8
----	----	---

 **Buckets of water**
17L

24	30	16
----	----	----

What goes out (daily)

 **Hours of biogas***

14.4	19.2	9.0
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 **Liters of biofertilizer**

600	780	405
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Stove

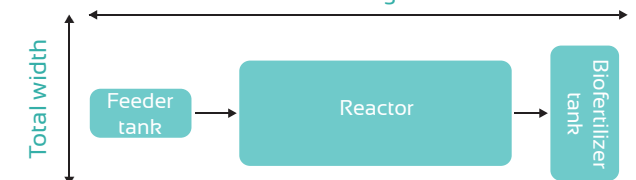


Burner

Stove availability according to region | Cannot be sold WITHOUT more biogas appliances - ask your sales agent

Total Area Required		
Total length (m)	Total width (m)	Total depth (m)**
19.0	4.0	0.9

**Total depth= 1 m for cold climate













Sistema 30






*The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.

NOTES:

- Sheeps/goats waste should always be moistened for 12 to 24 hours.
- Contact us for chickens in cold climate areas (10°C to 15°C).

		WEATHER		
		Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have				
 Pigs	81	113	56	
What goes in (daily)				
 Buckets of waste 17L	8	11	5.5	
 Buckets of water 17L	27	37	19	
What goes out (daily)				
 Hours of biogas*	15.8	22.5	10.1	
 Liters of biofertilizer	585	810	405	

		WEATHER		
		Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have				
 Sheeps/ Goats	149	200	100	
What goes in (daily)				
 Buckets of waste 17L	9	12	6	
 Buckets of water 17L	26	35	18	
What goes out (daily)				
 Hours of biogas*	9.4	12.8	5.8	
 Liters of biofertilizer	597	801	400	

		WEATHER	
		Temperate (15°C to 23°C)	Warm (>23°C)
If you have			
 Chickens	1100	1400	
What goes in (daily)			
 Buckets of waste 17L	6.5	8	
 Buckets of water 17L	16	20.6	
What goes out (daily)			
 Hours of biogas*	22	28	
 Liters of biofertilizer	385	490	

Sistema 40

WEATHER

Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
------------------------------------	------------------------	-------------------------------

If you have

 **Cows**
(fully confined)

13	18	9
----	----	---

What goes in (daily)

 **Buckets of waste**
17L

16	21	11
----	----	----

 **Buckets of water**
17L

31	31	21
----	----	----

What goes out (daily)

 **Hours of biogas***

19.1	25.9	12
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 **Liters of biofertilizer**

795	1050	540
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Stove

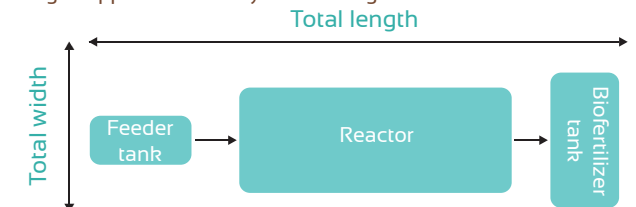


Burner

Stove availability according to region | Cannot be sold WITHOUT more biogas appliances - ask your sales agent

Total Area Required		
Total length (m)	Total width (m)	Total depth (m)**
23.0	4.0	0.9

**Total depth= 1 m for cold climate













Sistema 40

*The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.

NOTES:

- Sheeps/goats waste should always be moistened for 12 to 24 hours.
- Contact us for chickens in cold climate areas (10°C to 15°C).

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Pigs	109	147	75
What goes in (daily)			
 Buckets of waste 17L	10	14	6.5
 Buckets of water 17L	36	48	20
What goes out (daily)			
 Hours of biogas*	21.3	29.4	13.5
 Liters of biofertilizer	788	1058	540

	WEATHER		
	Temperate (15°C to 23°C)	Warm (>23°C)	Cold (10°C to 15°C)
If you have			
 Sheeps/ Goats	199	267	133
What goes in (daily)			
 Buckets of waste 17L	12	16	8
 Buckets of water 17L	35	47	24
What goes out (daily)			
 Hours of biogas*	12.5	17.1	7.7
 Liters of biofertilizer	796	1069	533






	WEATHER	
	Temperate (15°C to 23°C)	Warm (>23°C)
If you have		
 Chickens	1400	1900
What goes in (daily)		
 Buckets of waste 17L	8	11
 Buckets of water 17L	21	27.9
What goes out (daily)		
 Hours of biogas*	28	38
 Liters of biofertilizer	490	665

Table of content



Dairy cows

Model	Manure (L/day)	Number of cows	Biogas production	Biofertilizer production	
			(hr/day)**	(L/day)	(ac/year)
Sistema 6	45	5	3.3	135	12.1
Sistema 8	65	7	4.8	195	17.5
Sistema 12	90	9	6.7	270	24.4
Sistema 16	130	13	9.6	390	35.1
Sistema 20	180	18	13.3	540	48.7
Sistema 30	260	26	19.2	780	70.4
Sistema 40	350	35	25.9	1050	94.6
Sistema 80	700	70	51.8	2100	189.5
Sistema 120	1050	105	77.7	3150	284.2
Sistema 160	1400	140	103.5	4200	378.8
Sistema 200	1750	175	129.4	5250	473.5

Warm climate (>23° C)



Pigs

Model	Manure (L/day)	Number of pigs	Biogas production	Biofertilizer production	
			(hr/day)**	(L/day)	(ac/year)
Sistema 6	30	19	3.7	135	12.1
Sistema 8	40	25	5.0	180	16.3
Sistema 12	60	38	7.5	270	24.5
Sistema 16	80	50	10	360	32.4
Sistema 20	120	75	15	540	48.7
Sistema 30	180	113	22.5	810	73.1
Sistema 40	235	147	29.4	1058	95.4
Sistema 80	470	294	59	2115	190.2
Sistema 120	705	441	88	3173	286.7
Sistema 160	940	588	117	4230	380.5
Sistema 200	1175	735	147	5288	477

Temperate climate (15° to 23° C)

Sistema 6	35	4	2.5	105	9.39
Sistema 8	50	5	3.6	150	13.6
Sistema 12	65	7	4.7	195	17.5
Sistema 16	100	10	7.2	300	27.2
Sistema 20	135	14	9.7	405	36.6
Sistema 30	200	20	14.4	600	21.9
Sistema 40	265	27	19.1	795	54.1
Sistema 80	530	54	38	1590	143.3
Sistema 120	795	81	57	2385	215
Sistema 160	1060	108	76	3180	286.6
Sistema 200	1325	135	96	3975	358.3

Sistema 6	25	16	3.0	113	10.1
Sistema 8	35	22	4.3	158	14.1
Sistema 12	45	28	5.5	203	18.3
Sistema 16	65	41	7.9	293	26.4
Sistema 20	90	56	11	405	36.6
Sistema 30	130	81	15.8	585	52.9
Sistema 40	175	109	21.3	788	70.9
Sistema 80	350	218	43	1575	140.9
Sistema 120	525	327	64	2363	212.5
Sistema 160	700	436	85	3150	284.2
Sistema 200	875	545	107	3938	355.1

- * The biogas production is estimated based on a standard biodigester use.
- ** The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.
- *** Equivalent in electricity generation.

NOTE: a waste: dilution water ratio of 1:2 has been selected for cow manure.

- * The biogas production is estimated based on a standard biodigester use.
- ** The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.
- *** Equivalent in electricity generation.

NOTE: a waste: water dilution ratio of 1:3.5 has been selected for pig manure.

Table of content *_ Continued*



Dairy cows

Cold climate (10° to 15°C)	Model	Manure (L/day)	Number of cows	Biogas production	Biofertilizer production	
				(hr/day)**	(L/day)	(ac/year)
	Sistema 6	25	3	1.7	75	6.7
Sistema 8	35	4	2.3	105	9.4	
Sistema 12	45	5	3	135	12.1	
Sistema 16	65	7	4.3	195	17.5	
Sistema 20	90	9	6	270	24.5	
Sistema 30	135	14	9	405	36.6	
Sistema 40	180	18	12	540	48.7	
Sistema 80	360	36	24	1080	96.4	
Sistema 120	540	54	36	1620	145.8	
Sistema 160	720	72	48	2160	195.2	
Sistema 200	900	90	60	2700	244.6	

- * The biogas production is estimated based on a standard biodigester use.
- ** The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.
- *** Equivalent in electricity generation.

NOTE: a waste: dilution water ratio of 1:2 has been selected for cow manure.



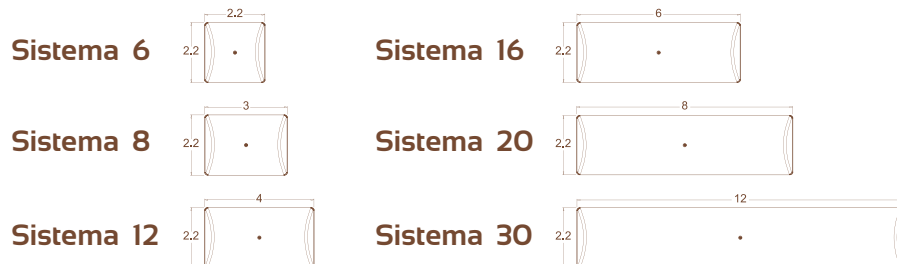
Pigs

Cold climate (10° to 15°C)	Model	Manure (L/day)	Number of pigs	Biogas production	Biofertilizer production	
				(hr/day)**	(L/day)	(ac/year)
	Sistema 6	16	10	1.8	72	6.4
Sistema 8	22	14	2.5	99	8.9	
Sistema 12	30	19	3.4	135	12.1	
Sistema 16	45	28	5.1	203	18.3	
Sistema 20	60	38	6.7	270	24.5	
Sistema 30	90	56	10.1	405	36.6	
Sistema 40	120	75	13.5	540	48.7	
Sistema 80	240	150	27	1080	96.4	
Sistema 120	360	225	40	1620	145.8	
Sistema 160	480	300	54	2160	195.2	
Sistema 200	600	375	67	2700	244.6	

- * The biogas production is estimated based on a standard biodigester use.
- ** The production of biogas is variable and depends on particular farm's operating conditions. Daily average cooking time on one burner.
- *** Equivalent in electricity generation.

NOTE: a waste: water dilution ratio of 1:3.5 has been selected for pig manure.

Comparative diagrams



Multireactors

- Sistema 80** = 2 x Sistema 40
- Sistema 120** = 3 x Sistema 40
- Sistema 160** = 4 x Sistema 40
- Sistema 200** = 5 x Sistema 40

Table of content_ Continued

Chicken / Poultry						
Model	Manure (L/day)	Number of adult chickens	Biogas production	Biofertilizer production		
			Daily average cooking time on one burner (hr/day)**	(L/day)	(ac/year)	
Sistema 6	30	290	5.7	105	7.4	
Sistema 8	40	380	7.6	140	12.4	
Sistema 12	60	570	11	210	17.3	
Sistema 16	75	760	15	263	22.2	
Sistema 20	95	950	19	333	29.7	
Sistema 30	145	1450	29	508	42	
Sistema 40	190	1900	38	667	56.9	
Sistema 60	290	2850	57	1015	86.5	
Sistema 80	380	3800	76	1330	116.1	
Sistema 120	570	5700	114	1995	173	
Sistema 160	760	7600	152	2660	229.8	
Sistema 200	950	9500	190	3325	289.1	

Warm climate (>23° C)

Chicken / Poultry						
Model	Manure (L/day)	Number of adult chickens	Biogas production	Biofertilizer production		
			Daily average cooking time on one burner (hr/day)**	(L/day)	(ac/year)	
Sistema 6	20	214	4.2	70	7.4	
Sistema 8	30	286	5.6	105	7.4	
Sistema 12	45	429	8.3	158	12.4	
Sistema 16	60	571	11	210	17.3	
Sistema 20	70	714	14	245	22.2	
Sistema 30	110	1071	21	385	32.1	
Sistema 40	140	1429	28	490	42	
Sistema 60	210	2143	42	735	64.2	
Sistema 80	290	2857	56	1015	86.5	
Sistema 120	430	4286	83	1505	128.5	
Sistema 160	570	5714	11	1995	173	
Sistema 200	720	7143	139	2520	215	

Temperate climate (15° to 23° C)

* The biogas production is estimated based on a standard biodigester use.

** The production of biogas is variable and depends on particular farm's operating conditions.

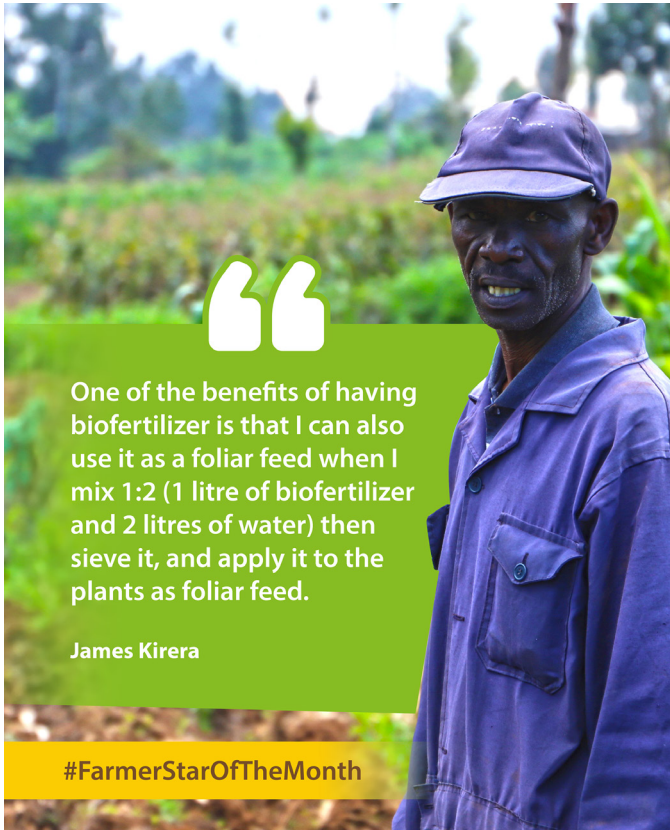
NOTE: a manure:water dilution ration of 1 to 2.5 has been selected for chicken and poultry manure.

Complementary notes for the digestion of poultry manure

- For cold climate areas (T<15°C), contact your local technical manager to confirm feasibility.
- For digesters with high biogas production it is important to flare the extra gas in order to avoid direct discharge to the atmosphere.
- Poultry digesters require a pretreatment tank of a volume equal to the daily biofertilizer production. The client needs to cover its cost: if needed, Sistema.bio can also provide its construction.
- The produced biofertilizer is the perfect additive in order to produce compost from agriculture leftovers.



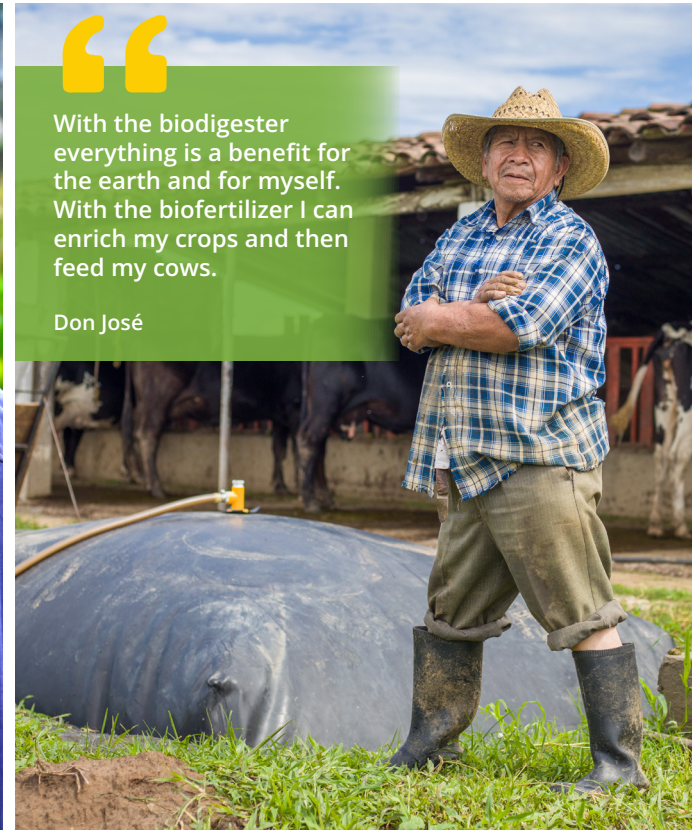
Meeting Sistema.bio, was the end of me using CAN and DAP. Now I am using biofertilizer, the cheapest and safest alternative fertilizer for my farm.



One of the benefits of having biofertilizer is that I can also use it as a foliar feed when I mix 1:2 (1 litre of biofertilizer and 2 litres of water) then sieve it, and apply it to the plants as foliar feed.

James Kirera

#FarmerStarOfTheMonth



With the biodigester everything is a benefit for the earth and for myself. With the biofertilizer I can enrich my crops and then feed my cows.

Don José

The package includes:



FREE
INSTALLATION



2 FREE
SERVICE VISITS



20 YRS
OF DURABILITY
& USE

*Ask our technicians about biogas accessories available in your region.

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