Is It Possible To Continually Produce Fodder On Planted Drying Beds Treating FS

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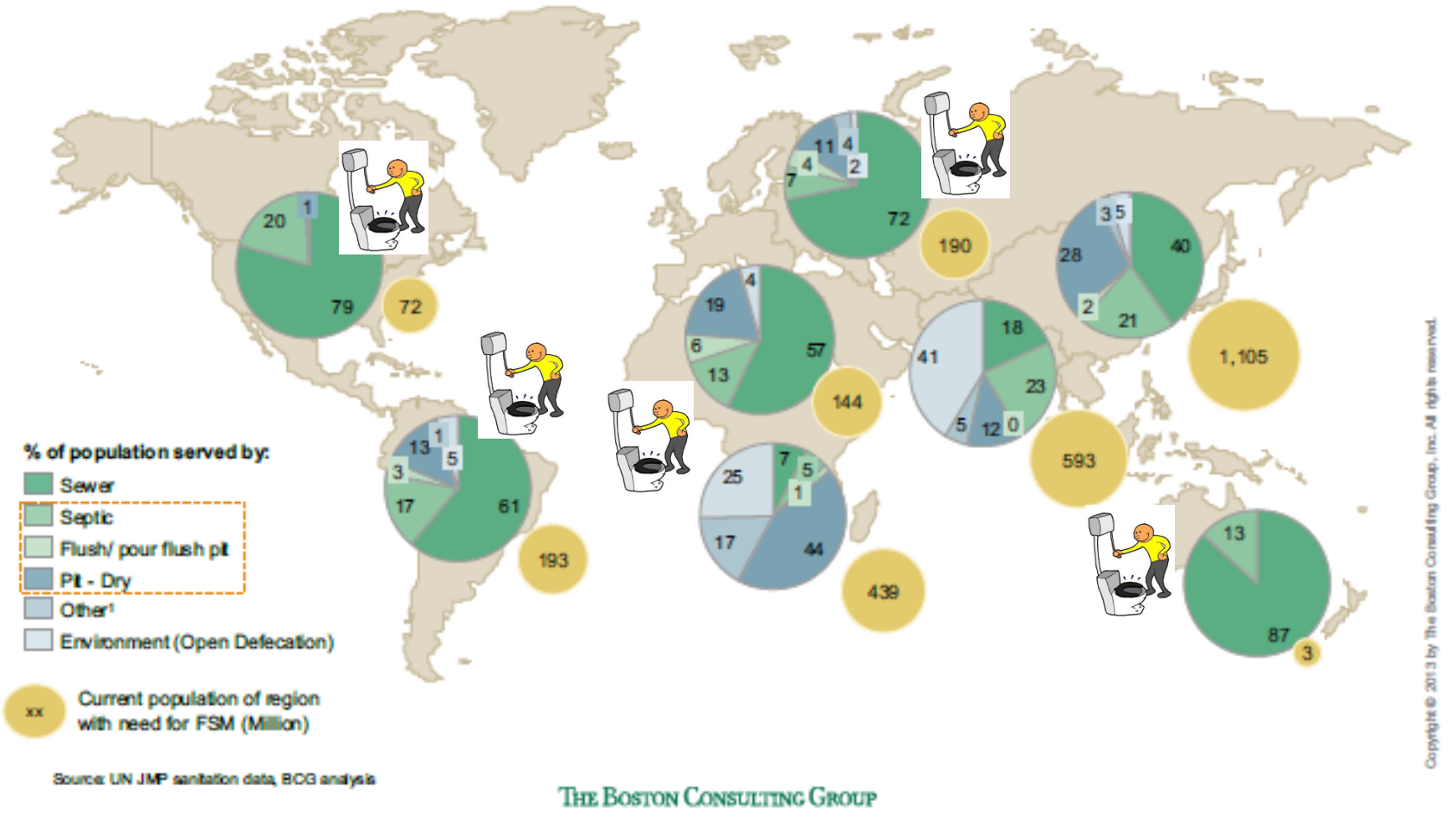
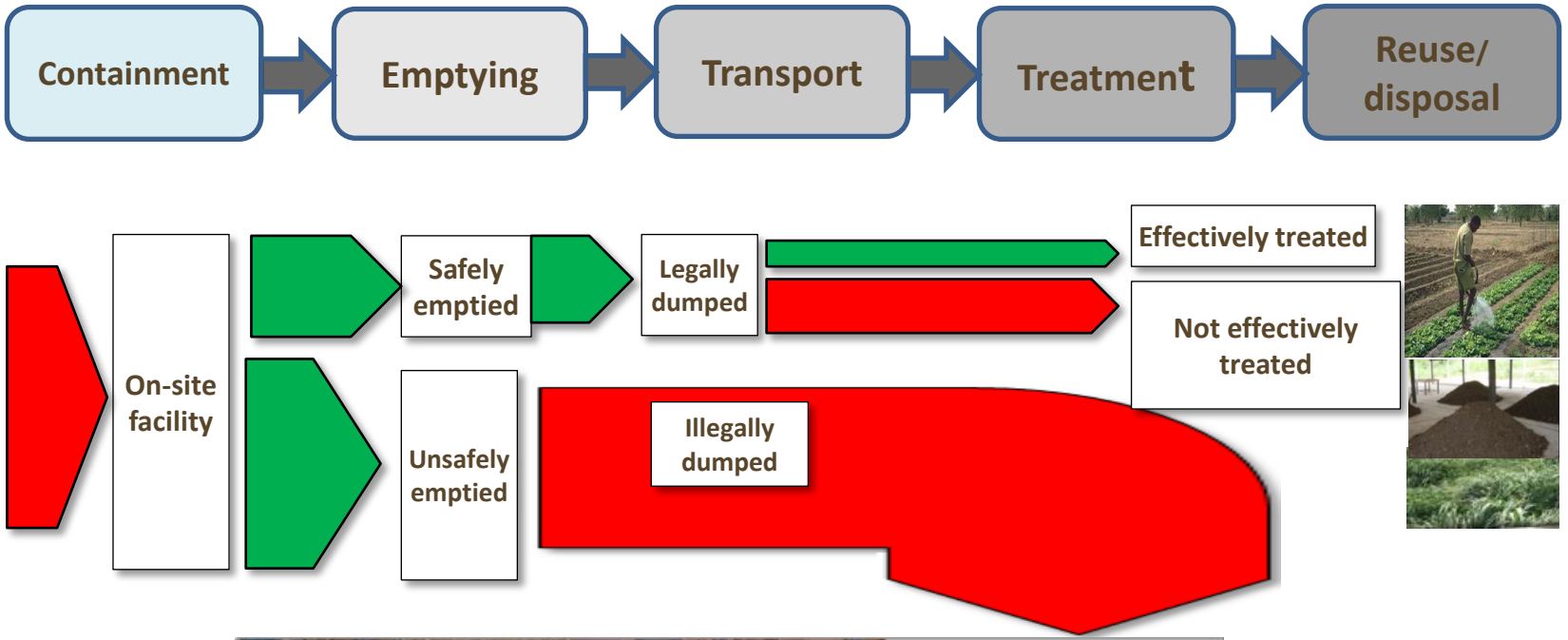
More than quarter of the world's population did not flush and forget about their shit



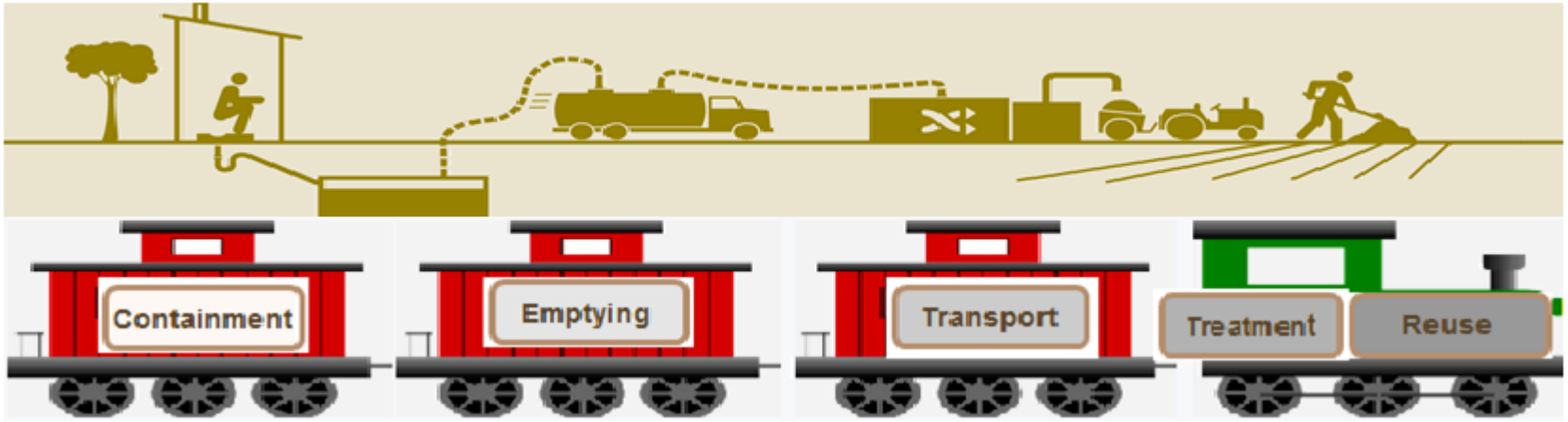
They must manage the accumulated FS

Lack of management system in place for the FS

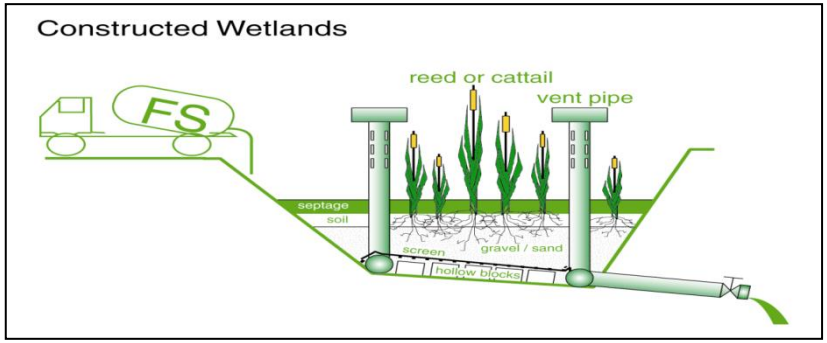


...not sustainable

…sustainable sanitation services.



…adopt and implement more resource efficient system

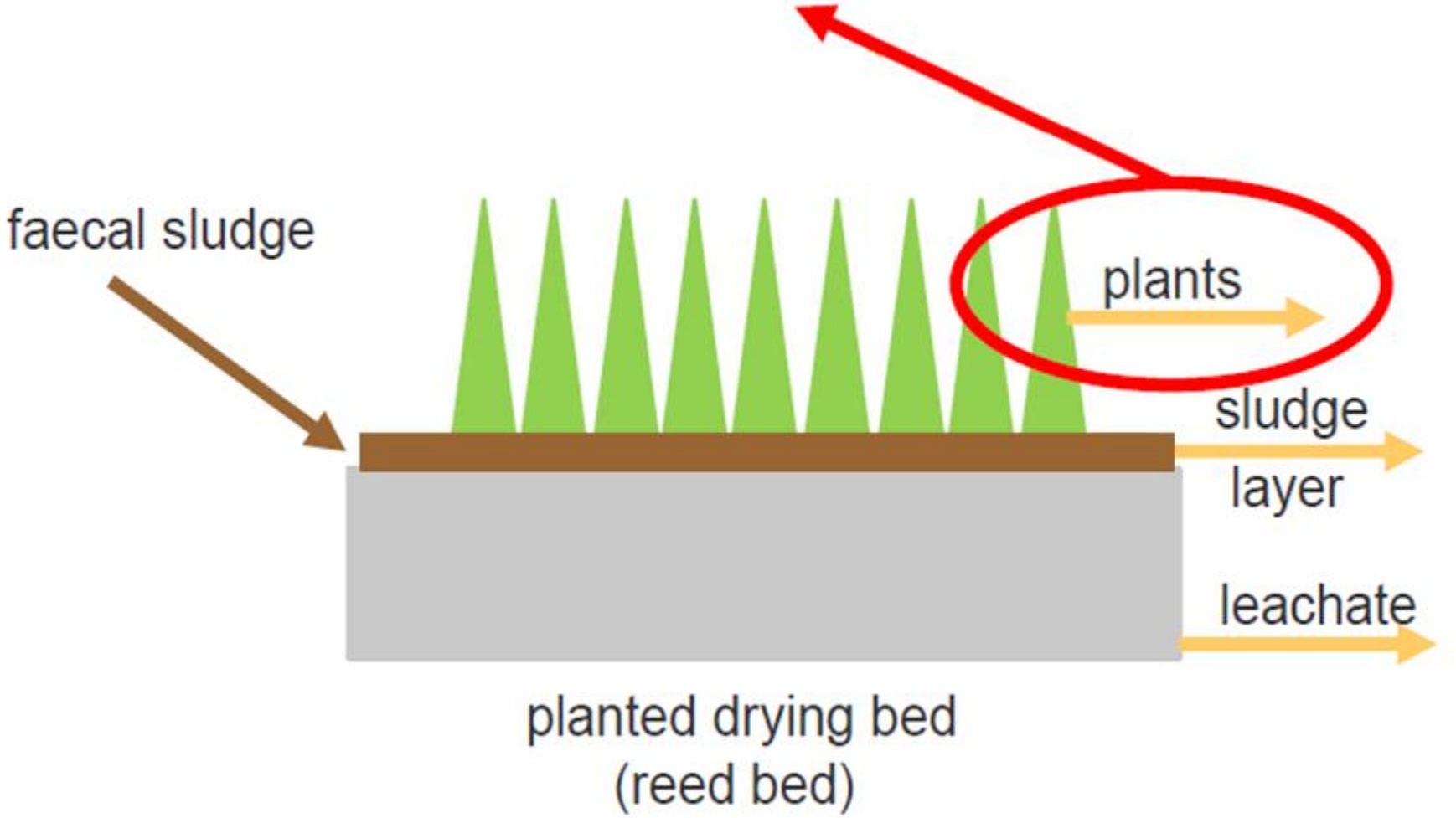


FERTILIZERS

FOOD FOR LIVESTOCK

Focus

- Has to be selected for the local context
- Great potential for fodder production, can offset some operation costs



…research is ongoing for adapting and optimizing the resource recovery

Lack of information on local potential plant

- Plant is the principal component of this system

  (Byoung and Scholz, 2007)

- Lack of research on using locally adapted plants

- …the potential for forage production in CWs is neglected

  (Pare and al, 2011)

Identification of forage plants

7 species

Interviews

Experience

Experience

Based on the superior growth performance and economic value……

E. crus-galli, E. pyramidalis, P. geminatum and P.vaginatum was selected for to analyze the effects of several harvest on forage production and quality

…several harvest

….Optimize feeding potential of plants

The advancing maturity increase the cell-wall composition and affect the feeding potential (Pare et al 2012).

How we can deal treatment process with several harvest for to use plant at an earlier stage of maturity.

System operation

Plantation

- 4 species: ***E. crus-galli, E. pyramidalis, P. geminatum, P. vaginatum***
- 9 fragment /baril ; 3 baril/sp.

Acclimatization
Scalling up

- Watered with:
- tap water -FS supernatant -FS
- Duration: 4 months

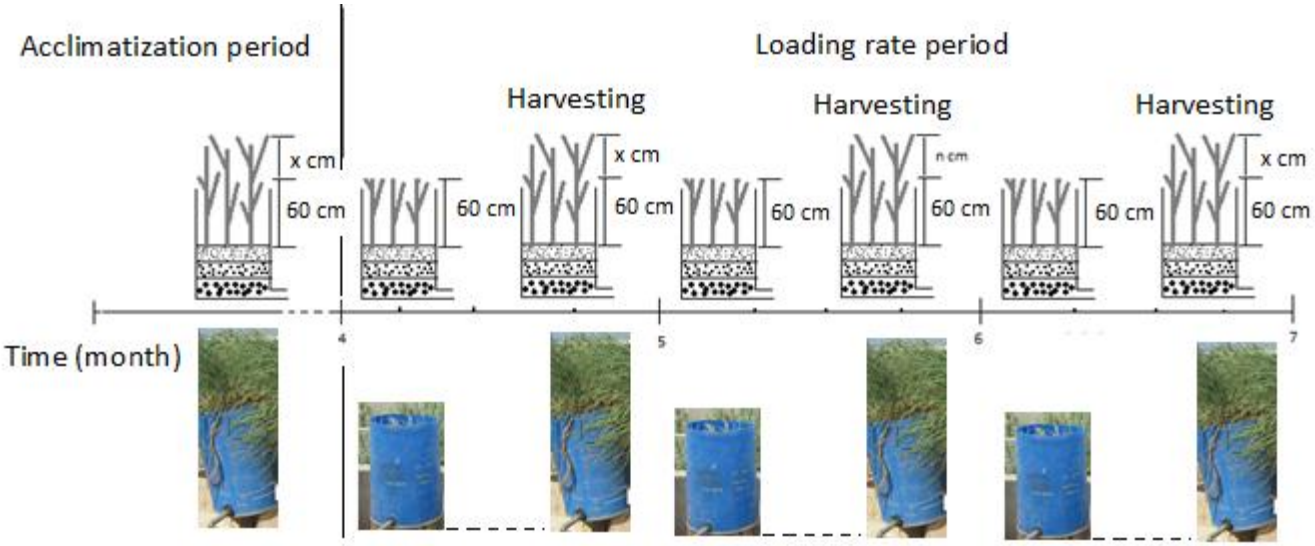
Operation at rated load

Total load:
200 kg TS/m2.year

Load frequencies:
3 loads /week

Duration:
3 months

Harvesting period:
at the end of each month

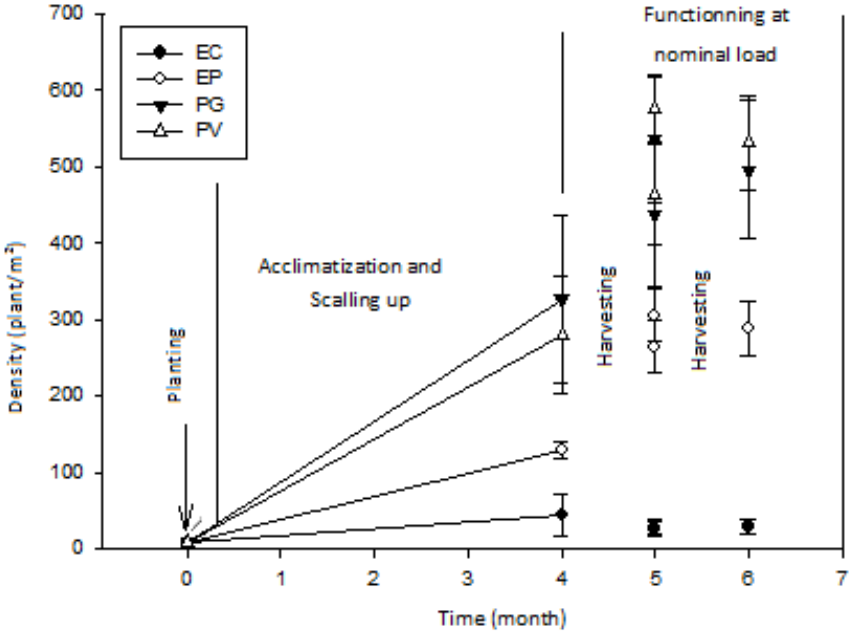


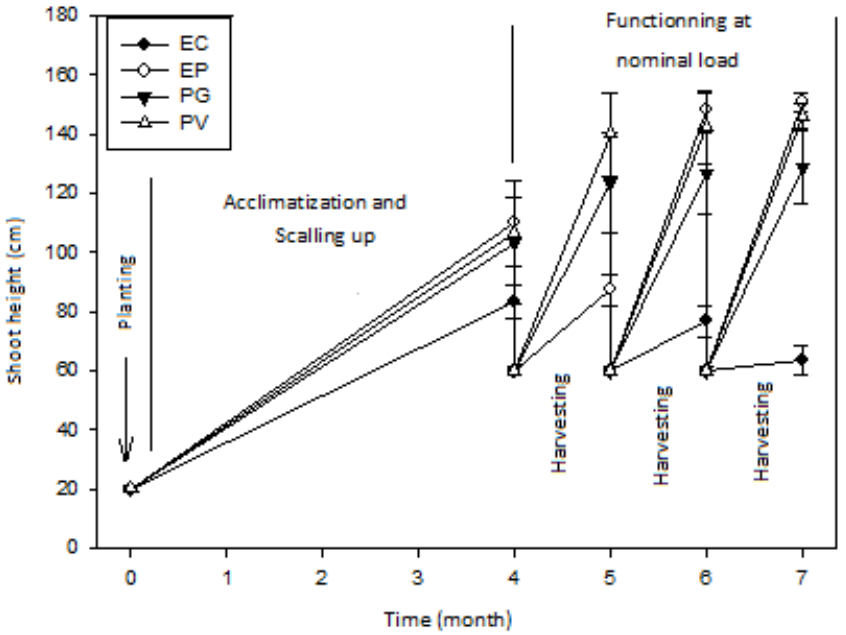
Physicochemical characteristics of FS

Parameters	Campaign		
	M1	**M2**	**M3**
TS (mg/l)	11.2±3.3	7.4±1.9	5.8±0.7
TSS (mg/l)	6.5±2.6	5.6±2.2	3.6±1.1
COD (mg/l)	8466.7±4412.6	6047.9±4315.7	10037.4±1689.3
TN (mg/l)	460.8±152.8	424.5±121.0	539.9±236.9
NH_3^+(mg/l)	323.3±99.8	322.8±184.8	350.3±174.1
NO_3^-(mg/l)	8±6	6.1±5.2	5.5±4.4
TP(mg/l)	353.0±100.4	451.9±218.1	278.2±30.4
PO_4^{3-}(mg/l)	258.7±82.2	224.5±106.3	168.2±35.1

- FS is slightly concentrated…. considerable variability

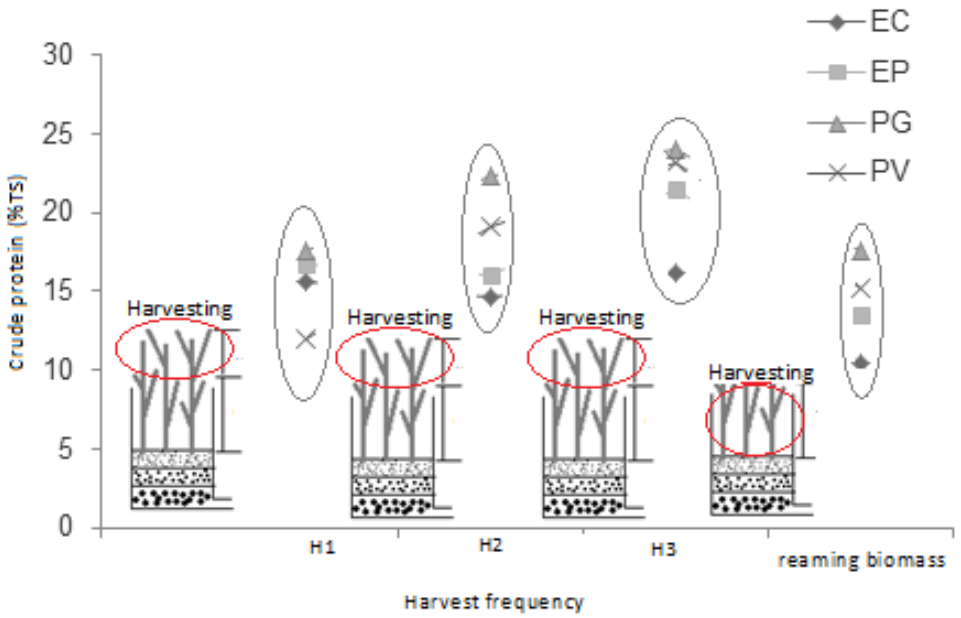
Forage production

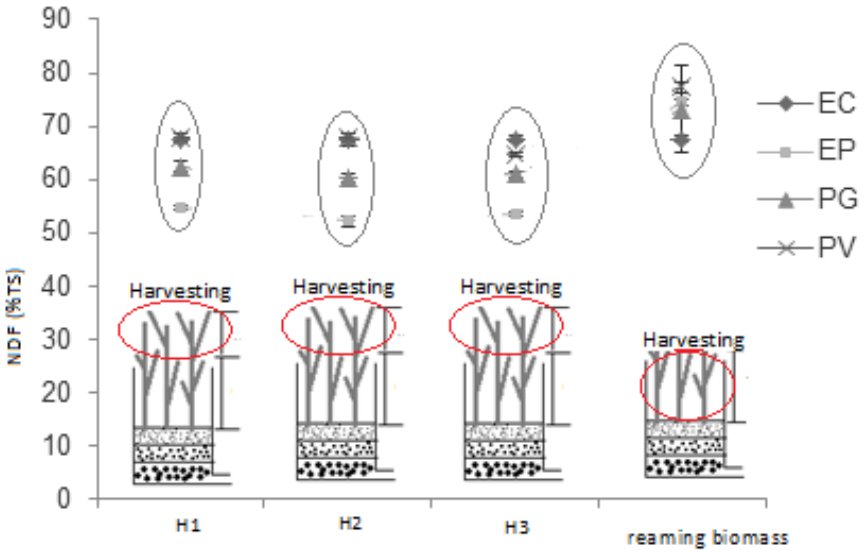




E. pyramidalis, P. geminatum, P. vaginatum showed sustainable biomass production whereas *E. crus-galli* showed less tolerance to repeated harvesting

Forage quality





For all species tested, harvest the plants repeatedly increased nutrient yields

Conclusion

- *E. pyramidalis, P. geminatum, P. vaginatum* was found to be suitable plant for suistanable biomass production with repeated harvesting;
- Regarding the forage quantity and quality, the results obtain indicate that this fodder plant had a suitability for reuse as a feeds for livestock and;
- It is possible to deal treatment process and forage production in planted drying beds

Thank you !!!