

Urine in Urban Agriculture in Accra, Ghana

Assumption

Urine if properly harvested and managed, can replace fertiliser as nitrogen source and improve environmental sanitation in cities.

Constraints

Societal perception and logistic requirement.

Research/Demonstration

To pilot test the potential for using urine for crop production in Accra Metropolitan Area and provide recommendations for scaling up its use.

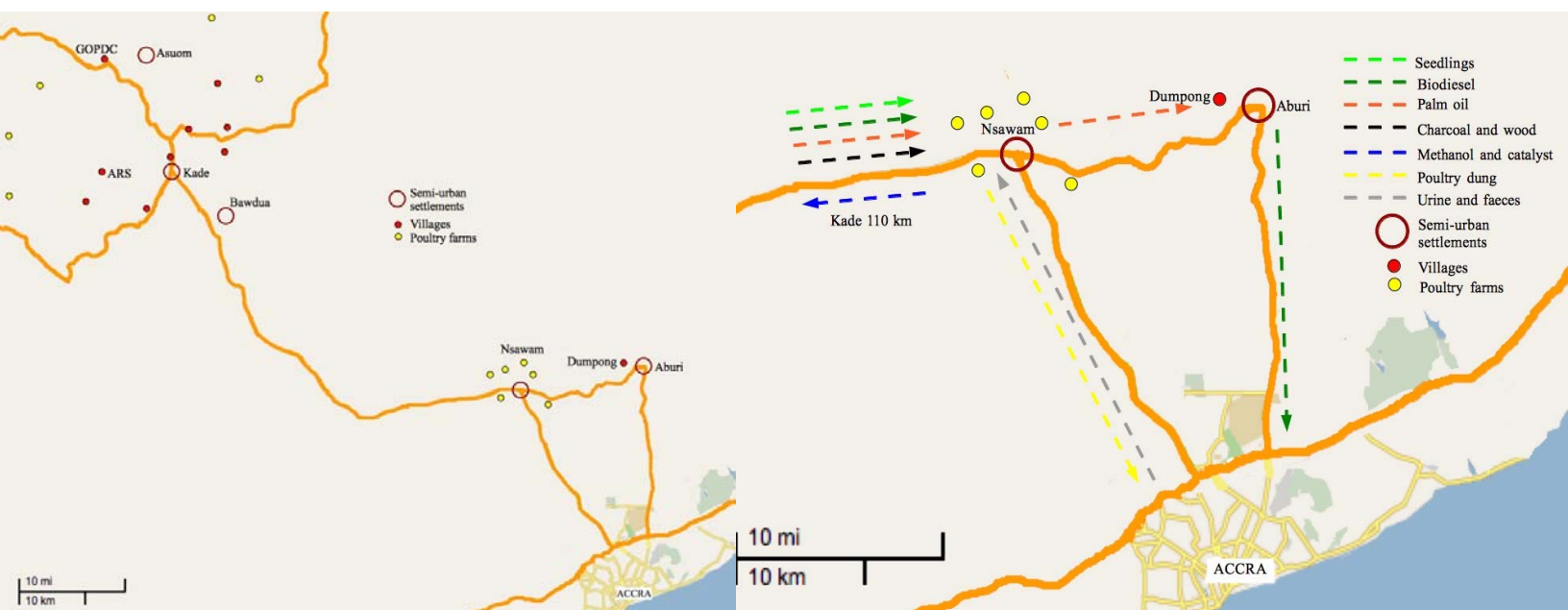
perception vs willingness to buy
demand vs supply

technical vs financial feasibility



Findings

- positive perception and willingness to use by farmers
- 50% of marketers are willing to buy
- urine grown crops compared favourably with crops grown with fertilizer
- 77% of marketers are not willing to buy at higher price
- for profitable business, the user fee has to increase by 50%
- scaling up will require a different supply chain



Linking urban and peri urban Accra: alternative supply chain for urine ,Accra-Nsawam-Dumpong .Source: Martinez, 2009)

Outputs

Guidelines
Training manual
MSc theses

Table 3: financial analysis of the investment into urine-based fertiliser production system - Private ownership

Investment cost	78502.60
Total operating cost	1062106.04
Total benefit	885433.00
NPV (25%)	GH¢ -89372.15
BCR (25%)	0.59:1
IRR	-

Source: Survey results, May 2010

Table 4: financial analysis of the investment into urine-based fertiliser production system - Public ownership

Investment cost	GH¢ 78,502.60
Total operating cost	GH¢ 793,820.04
Total benefit	GH¢ 885,433.00
NPV (25%)	GH¢ -50699.01
BCR (25%)	0.71:1
IRR	1.37%

Source: Survey results, May, 2010

- The results of the sensitivity analysis showed that the investment can be ***financially profitable***;
- for a profit-oriented entrepreneur and AMA only if the discount rate is 20% and lower with a urine user fee of GH¢ 0.10 or higher per visit and sale of urine to farmers at GH¢0.30 per jerry-can (20 litres).
- As it gave NPVs, BCRs and IRRs (GH¢ 8,147.79, 1.03 and 22.65%) and (GH¢ 104901.34, 1.49 and 51.45%),
- with payback periods of 5.44years and 2.91 years respectively.