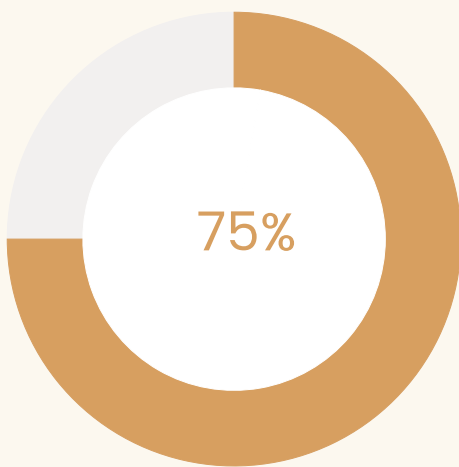


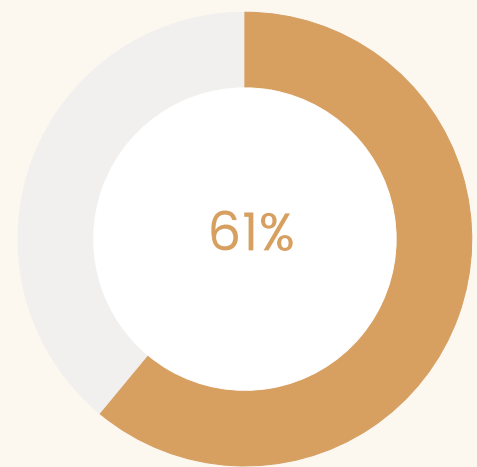
Business Model Selection for **Trichy**

Residential-Institutional
Biogas Model



Feasibility **Good**

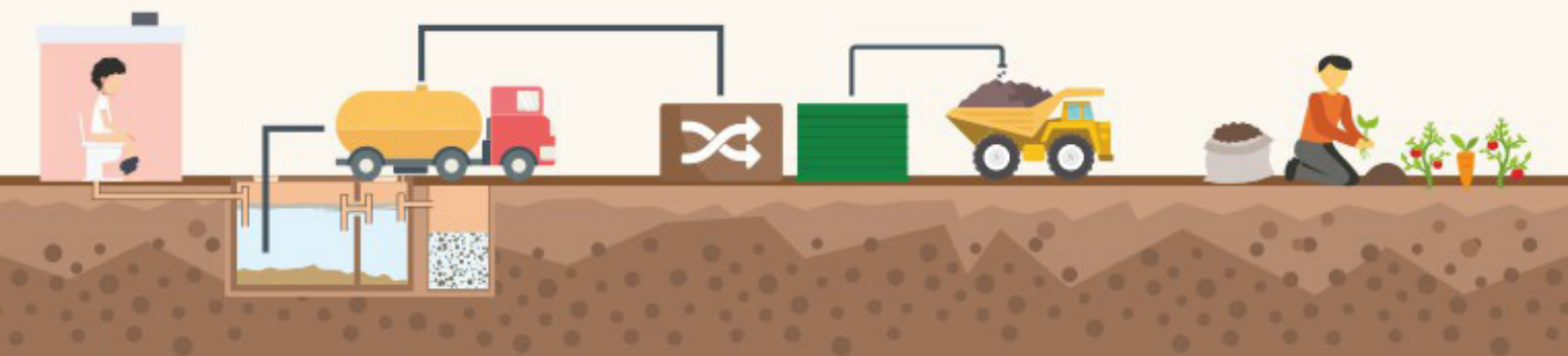
Full Private Model



Feasibility **Medium**

The FSM Index score indicates that the
Overall FSM performance of the city is

Scale: Poor 0-33% | Medium 33-66% | Good 67-100%.



Business Model Selection Report: Trichy

04 April 2019

Generated By: Vishnu.D

Produced By: Vishnu.D, Pavish, Trichy, Tamil Nadu, India.

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Business Model

Knowledge of potential business model options and evaluation of their suitability for the city is essential for FSM entrepreneurs. Based on the area of interest(s) in the FSM value chain, relevant business model case studies from across the world are presented. This planning module of the FSM Toolbox offers the users with case studies on a range of business models implemented in different parts of the world across the value chain, referenced from IWMI's Resource Recovery and Reuse Series 6 document. It also assists users in evaluating the relevance of these different models to their context to determine the feasibility of implementation.

Note: This module should only be used as a pre-feasibility tool and not an 'end-to-end business solution' tool. The main objective of this section is to function as a guiding tool for users who are interested to start a business in the FSM sector and already are familiar with the intricacies of the sector. This tool only showcases the possible business options which have been documented as part of IWMI's report on 'Business Models for Faecal Sludge Management' as part of the Resource Recovery and Reuse Series.

Basic Information about your city:

- City Name: Trichy
- State: Tamil Nadu
- Country: India
- Total Population: 100000

The business models selected are:

S#	Name of Business Model
1	Residential-Institutional Biogas Model
2	Full Private Model

Feasibility Assessment

Mandatory and optional variables are used to calculate the feasibility score for the business models selected based on their requirement. The presence of the mandatory variables is essential for the successful implementation of the business models. However, the presence of the optional variables supports the ecosystem and is not an essential requirement for the existence of the business models. Both variable types have equal weightage in the feasibility calculation.

Mandatory Variables for Business Model

Sl.No.	Collection and Conveyance	Requirement
1	Are there regulations (rules/guidelines) for desludging frequencies?	YES
	Is there an institution with mandate towards enforcing the desludging frequency?	YES
2	Is there a regulation for licensing of desludging operators and workers?	YES
	Is there an institution with mandate for licensing desludging operators and workers?	YES
3	Are there standard operating procedures (zone/time of operations, accidents, spills, proper disposal, record keeping, route planning) for desludging/transportation?	YES
	Is there an institution with mandate for monitoring of desludging operator's compliance to standard operating procedures?	YES
Sl.No.	Treatment	Requirement
1	Are there design standards for design, operation and	YES

	maintenance of treatment facilities?	
	Is there an institution with mandate for monitoring design, operation and maintenance of treatment facilities?	YES
2	Are there standards for effluent disposal?	YES
	Are these standards enforced in the city?	YES
	Is there an institution with the mandate for monitoring compliance to effluent disposal standards?	YES
3	Are there standards for solids disposal?	YES
	Is there an institution with mandate for monitoring compliance to solids disposal standards?	YES

Optional Variables for Business Model

Sl.No.	Containment	Requirement
1	Are there standards for the construction of a particular type of On-Site Sanitation System (OSS)?	YES
2	Are there regulations for improving improperly built OSS?	YES
	Is there an institution with mandate for improving OSS?	YES
3	Are there regulations (rules/guidelines) for issuing permits for OSS construction?	YES
	Is there an institution with	YES

	mandate for issuing permits for OSS construction?	
	Are there enough resources (financial and human) to verify and issue permits for OSS construction?	YES
Sl.No.	Collection and Conveyance	Requirement
1	Are there vehicle standards for determining the roadworthiness (whether the vehicle can access the roads in terms of elevation - steep climb, road width, etc.) of desludging vehicles?	YES
	Is there an institution with mandate for monitoring whether the desludging vehicles meet the roadworthiness standards?	YES
Sl.No.	Treatment	Requirement
1	Are there standard operating procedures for the treatment plant?	YES
	Is there an institution with mandate to monitor the treatment plant's compliance to standard operating procedures?	YES
Sl.No.	Reuse - Variables	Requirement
1	Are there regulatory provisions for legalising reuse of treated end products	YES
	Is there an institution with mandate to legalise reuse of treated end products?	YES
2	Are there standards prescribing the quality of reuse by-products for a particular use?	YES

	Is there an institution with mandate to inspect the quality of by-products generated for re-use?	YES
Sl.No.	Other Institutional Variables	Requirement
1	Is there an institution with mandate for FSM related coordination between institutions/stakeholders?	YES

The feasibility of the business models is grouped as Good, Medium and Poor based on the score obtained.

Scale: Poor (0-33%), Medium (33-66%), Good (67-100%)

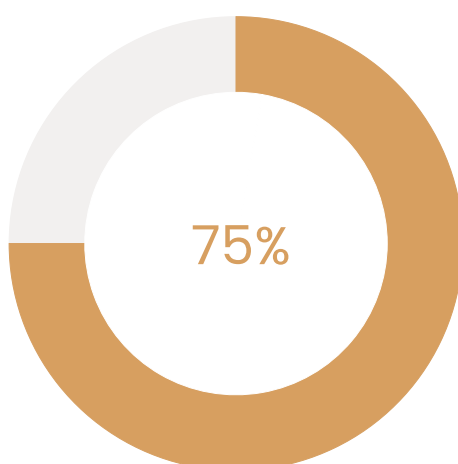
The feasibility of the selected business models are:

(E.g.:

1- 30% (poor)

2- 60% (medium)

Residential-Institutional Biogas Model



Feasibility **Good**



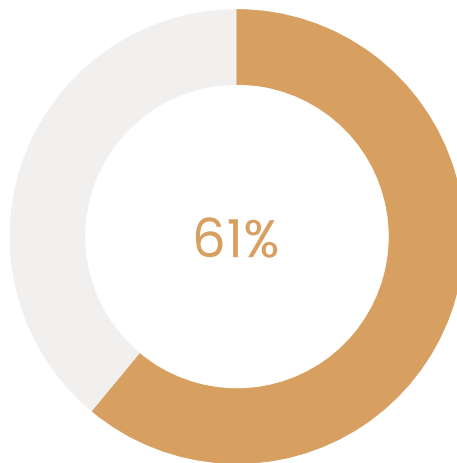
Recommendations for implementation of Residential-Institutional Biogas Model.

The following table lists the key requirement for successful implementation of this business model.

Sl.No.	Treatment	Requirement	Your Answer	Recommendations
1	If yes, are these standards followed and enforced in the city?	yes	no	Once these regulatory provisions are in place, it is required that the provisions are enforced and practiced on ground.
	If yes, are there resources (financial and human) for monitoring design, operation and maintenance of treatment facilities?	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources.
2	If yes, are there resources (financial and human) for monitoring compliance to effluent disposal	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources (financial and human).

	standards?			
3	If yes, are these standards enforced in the city?	yes	no	Once these regulatory provisions are in place, it is required that the provisions are enforced and practiced on ground.
	If yes, are there adequate resources (financial and human) for monitoring compliance to solid disposal standards?	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources (financial and human).

Full Private Model



Feasibility **Medium**



Recommendations for implementation of Full Private Model

The following table lists the key requirement for successful implementation of this business model.

Sl.No.	Containment	Requirement	Your Answer	Recommendations
1	If yes, are these standards followed or enforced in the city?	yes	no	
2	If yes, are these regulations enforced in the city?	yes	no	
	If yes, is there a budgetary allocation for improving (retrofitting/r edevelopment) sub-standard OSS?	yes	no	
Sl.No.	Collection and Conveyance	Requirement	Your Answer	Recommendations
1	If yes, is the regulation	yes	no	Once these regulatory provisions are in

	enforced in the city?			place, it is necessary for the provisions to be enforced and practiced to increase the demand for desludging.
	If yes, are there enough resources (financial and human information) to enforce this?	yes	no	In order for the institution to enforce the regulations on the ground, it needs to have the required financial and human resources.
2	If yes, is the regulation enforced in the city?	yes	no	Once these regulatory provisions are in place, it is required that the provisions are enforced and practiced on ground. The implementer of the business model should be aware of the such enforcements.
	If yes does it have the resources (financial and human) required for licensing desludging operators and enforcing it on ground?	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources (financial and human).
3	If yes, are these standards enforced in the city?	yes	no	Once these regulatory provisions are in place, it is required that the provisions are enforced and practiced on ground. The implementer of the business model should be aware of the such enforcements.
	If yes, is there enough resources (financial and human) for monitoring of desludging operator's compliance to standard operating procedures?	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources (financial and human).
4	If yes, are these standards followed in the city?	yes	no	
	If yes, is there resources (financial and human) for monitoring roadworthiness of	yes	no	

Sl.No.	Treatment	Requirement	Your Answer	Recommendations
1	desludging vehicles?			
	If yes, are these standards followed and enforced in the city?	yes	no	Once these regulatory provisions are in place, it is required that the provisions are enforced and practiced on ground.
2	If yes, are there resources (financial and human) for monitoring design, operation and maintenance of treatment facilities?	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources.
	If yes, are there resources (financial and human) for monitoring compliance to effluent disposal standards?	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources (financial and human).
3	If yes, are these standards enforced in the city?	yes	no	Once these regulatory provisions are in place, it is required that the provisions are enforced and practiced on ground.
	If yes, are there adequate resources (financial and human) for monitoring compliance to solid disposal standards?	yes	no	In order for the institution to enforce the relevant regulations, it needs to have the required resources (financial and human).
4	If yes, are these procedures enforced and followed in the city?	yes	no	
	If yes, are there adequate resources (financial and human) for regular inspection of treatment operations and compliance to standard operating procedures?	yes	no	

FSM Toolbox has an extensive repository of knowledge products that are most relevant to your city. Here is a list of select knowledge products for your reference. [Click here to learn more.](#)