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Stakeholder Analysis in Paddy Processing Chain of Southern Tamil Nadu

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ABSTRACT

Stakeholder mapping is a collaborative process of research, debate, and discussion that is drawn from multiple perspectives to determine a key list of stakeholders across the entire spectrum. The first step in the mapping process is to identify the stakeholders. After the identification of the stakeholders, further analysis was made to understand their relevance and the perspective they offered to the paddy processing chain. The stakeholders were prioritized based on list of criteria developed by Business for Social Responsibility (BSR). The paddy processing chain comprised of different stages and the stakeholders of the chain were identified from sourcing of paddy to delivery of end product (rice). The stakeholder analysis revealed the importance of various stakeholders in the paddy processing chain in Southern Tamil Nadu with respect to their expertise and value contribution. The analysis also captured the nature and degree of relationship among the identified stakeholders.

Keywords: Stakeholder, Stakeholder Mapping, Paddy processing chain

Rice is the world's third most important cereal crop after corn and wheat, based on production volume. With over 200 million metric tons of production, China is the world's leading rice producer, while India is the country with the largest area where rice is harvested. The total food grains production in India reached around 264771 thousand tonnes (2013-14) and production of paddy accounted for 106539.9 thousand tones (2013 – 14). Production in Tamil Nadu was 5536.9 tonnes during the same period (RBI, 2014). Paddy processing is one of the traditional agro processing industries in India. The chain has multiple stakeholders and the value of the output.

Freeman (1984) described stakeholders broadly as any individual or group of individuals who can affect or be affected by the implementation of a business that is the most common. The term included suppliers, customers, shareholders or owners, employees, local communities and national political groups, the political authorities (national and regional), the media, etc.

Stakeholder Mapping - Review

The term stakeholder was truly popularized by Freeman in 1984 with his Stakeholders' theory. Stakeholder analysis aims to evaluate and understand stakeholders from the perspective of an organization, or to determine their relevance to a project or policy (Blair *et al.,* 1990). Walt (1994) highlighted the fact that many different groups, including non-governmental organizations (NGOs), may be involved in both policy formulation and policy implementation; and that policy makers need to mobilize support and resources in favour of policy reforms. Reed *et al.* (2009) describe three steps in stakeholder analysis: identifying stakeholders, differentiating between and categorizing stakeholders and investigating relationships between stakeholders. Grimble

and Chan (1995) describe the following steps: identify the purpose of analysis (goals); develop an understanding of the system, decision makers, and drivers of decisions; identify principal stakeholders; investigate stakeholder interests, characteristics and circumstances; and identify patterns and contexts of interaction between stakeholders.

Stakeholders were classified as *primary* and *secondary stakeholders* (Carroll, 2009). The primary stakeholders are directly involved in the economic process and have an explicit contract with the company. They include business owners, customers, employees and suppliers who are essential to the survival of the company. Secondary stakeholders have more of a moral or implied contract with the firm, relations can be voluntary or not.

Stakeholder mapping is a collaborative process of research, debate, and discussion that draws from multiple perspectives to determine a key list of stakeholders across the entire stakeholder spectrum. Mapping was broken down into four phases:

1. ***Identifying***: listing relevant groups, organizations, and people
2. ***Analyzing***: understanding stakeholder perspectives and interests
3. ***Mapping***: visualizing relationships to objectives and other stakeholders
4. ***Prioritizing***: ranking stakeholder relevance and identifying issues

Identifying the Stakeholders

The first step in the mapping process was to identify the stakeholders. The list depended on the type of business, its impacts, and objectives of the business, and it may not be static. This list was subject to change as the environment changed or the stakeholders themselves made decisions or changed their opinions. For example the list may contain the following:

- Owners (e.g. investors, shareholders and agents)
- Customers (e.g. direct customers, indirect customers)
- Employees (e.g. current employees, potential employees, retirees, representatives, and dependents)
- Industry (e.g. suppliers, competitors and industry associations)
- Community (e.g. residents near company facilities, chambers of commerce, resident associations, schools and community organizations)
- Environment (e.g. nature, future generations, scientists, and NGOs)
- Government (e.g. public authorities, and local policymakers; regulators; and opinion leaders)

Analyzing the Stakeholders

After the identification of the stakeholders, further analysis was made to understand their relevance and the perspective they offered to the paddy processing chain. Their relationship to the issues of the chain was also taken into consideration. The stakeholders were prioritized based on list of criteria developed by the International organization Business for Social Responsibility (BSR). The list of criteria considered is given below:

- ***Contribution (value)***: Contribution of stakeholder in analyzing the issues of the company. Their knowledge or expertise or information that helped to the firm to conduct the business and improve the performance was considered.
- ***Legitimacy***: The claim of the stakeholders for their engagement in the business.
- ***Willingness to engage***: The willingness of the stakeholders to engage in the issue.
- ***Influence***: The influence of the stakeholders in the business and whom does they influence was also considered.
- ***Necessity of involvement***: The reason of involving the stakeholders and their response if they were not included in the decision-making.

Mapping the Relationships

Mapping was made by combining the first three criteria under the head expertise and the last two criteria under value. Mapping was done based on the following five point criteria;

1. Contribution / value
2. Legitimacy
3. Willingness to engage

} Expertise

4. Influence
5. Necessity of involvement

} Value

Values of high, medium, low were assigned to each stakeholder and the chart was prepared. Stakeholders Map was prepared by drawing two quadrants where the expertise was assigned to the y axis and willingness was plotted in the x axis. The stakeholders were plotted in the grid using circles. The small, medium and large sized circles denoted the relative value of the stakeholder. Arrows were drawn to denote the influence or direction of relationships between the stakeholders.

Prioritizing the Stakeholders and Identifying Issues

It is not practical and not necessary to engage all stakeholder groups with the same level of intensity all the time. The strategic decisions regarding whom to engage and why they should be engaged in the business could save both time and money. The stakeholders of the paddy processing chain were prioritized based on their relative value.

Methodology

The major paddy processing clusters in Tamil Nadu based on the concentration of paddy processing units are Alankulam, Dhalavaipuram, Pudhuvayal, Kangeyam, Madurai, Thiruvarur and Villupuram. Southern Tamil Nadu was purposively selected for the study for the reason that as many as five paddy processing clusters were located in the region. Three clusters namely Madurai, Dhalavaipuram and Puduvayal were again purposively selected to provide the sample an even spread of geographical locations representing the Southern region of Tamil Nadu.

Ninety paddy processing units (PPUs) were selected for conduct of the study. Thirty PPUs each from Madurai, Dhalavaipuram and Puduvayal clusters were selected. Based on the technology adopted, the PPUs were categorized into conventional and modern units. The data required for the study was gathered through personal interview method from the owners of selected paddy processing units.

Mapping the Stakeholders of the Paddy Processing Chain

The paddy processing chain comprised of different stages and the stakeholders of the paddy processing chain were identified from the following six major functions in a PPU starting from sourcing of paddy to delivery of rice to the customers.

1. Procurement of paddy
2. Transportation of paddy for processing
3. Storage of paddy
4. Processing of paddy
5. Grading and Packing of rice
6. Transportation of rice to the customers

Procurement of Paddy

Paddy processing units (PPUs) procured paddy from all over Tamil Nadu and nearby states. The demand for Karnataka paddy varieties was higher in Tamil Nadu due to its premium quality fine grains, amenability to prolonged storage, better processing conversion ratio and for its better cooking quality. Procurement of paddy from Tamil Nadu faced problems of availability due to monsoon failures that resulted in poor quality of the grain. The cooking quality rice produced in Tamil Nadu was dominated by the Karnataka paddy varieties and coarse grain varieties ruled the market for *Idly* and *Dosa* making. Majority of the millers purchased paddy from Karnataka through brokers / agents and transported it to the PPUs. Representatives of the PPU travelled to the market and verified the quality of the paddy being procured and fixed the price based on the expected quality of grain. The PPUs also sourced the raw materials directly from the **farmers** who brought their produce to the processing unit.

Transportation of Paddy for Processing

The procured paddy was transported to the respective PPUs through logistics providers. Loading and unloading charges were fixed based on the distance covered. The rice millers association negotiated the transport tariffs with the logistics providers for one year. The risk during the transit from the point of procurement till the delivery was borne by the farmer or the seller.

Storage of Paddy

The procured paddy was stored in the warehouse or own godowns after drying it to optimum moisture level. Fine grain varieties were stored for 12 to 18 months before processing. The market price

for rice processed from old stocks of paddy was higher when compared to new arrivals due to better cooking and keeping quality. The conversion ratio of cooked rice (old paddy) was also higher.

Processing of Paddy

There are different forms of cooking rice available in the market such as raw rice, steam rice, single boiled rice and double boiled rice. The demand for single boiled and steam rice varieties was higher in Tamil Nadu markets. Double boiled rice is being preferred in Kerala markets and raw rice is being preferred in Andhra Pradesh and Karnataka markets. The paddy to rice conversion ratio, quantity of by-products obtained, solid and liquid wastes generated at various stages of processing varied with machineries and processing technology used for processing the paddy. The suppliers of the machineries or the storage structures were also the important stakeholders in the paddy processing chain, besides the conventional and modern paddy processing units.

Grading and Packing of Rice

Rice was graded based on the size, colour, texture, cooking quality and shelf life. There were different brands associated with each grade and each variety (coarse and fine rice). The head rice and the brokens were packed and sold in different markets. The pack size of head rice ranged from 5 kg to 100 kg. Based on the consumer preference, the rice was packed in different materials such as woven / non-woven bags, cloth and gunny bags. The packages sourced from the suppliers are customized for each PPU and specific for each target market.

Transportation of Rice to the Customers

The finished products were transported to the customers at the risk of PPU. The finished products were sent to all parts of Tamil Nadu under different brand names. The inferior / unaccepted products were sent back to the concerned PPU by the buyers.

Apart from the above stakeholders, employees of PPUs, rice mill association, customers, local community, public authorities and policy makers, research institutions and competitors also influenced the conduct of PPU. The listed stakeholders were analyzed to understand their relevance and the perspective they offered and to prioritize based on their relative influence for the conduct of the business. Stakeholder analysis was done based on the following five point criteria;

1. Contribution / value
2. Legitimacy — Expertise
3. Willingness to engage
4. Influence
5. Necessity of involvement — Value

The values of high, medium, low were assigned for each criterion based on the five point scale to each stakeholder and the chart was prepared. Every criterion was rated on five point scale (very low, low, medium, high and very high) for its relevance in conduct of the business. Stakeholders were mapped by drawing two quadrants where the expertise was assigned to the y axis and willingness was plotted in the x axis. The stakeholders were plotted in the grid using circles. The small, medium and large circles denoted the value of the stakeholder. Arrows were drawn to denote the influence or relationships between the stakeholders. The five point criteria used for stakeholders analysis chart of paddy processing chain is presented in Table 1.

It could be concluded from the Table 1 that suppliers, logistics providers, employees, industry associations, research institutions and the general public had higher contribution in the processing chain. They played a major role in sharing the information necessary for smooth conduct of business in PPUs. Employees and the general public had higher levels of legitimacy. The third criterion of willingness to engage in solving the issues in the chain was low among the government, competitors, consumers and suppliers of raw materials. The influence of competitors was high on various aspects such as procuring the good quality raw materials at higher price and increasing their domestic market share.

Government had profound influence on the pricing mechanisms and trade of paddy in the market. Some of the PPUs in the state take up processing of paddy varieties that were distributed through public distribution system. Paddy processing units joined together to form associations in every cluster to solve the issues related to pollution, infrastructure

Table 1: Stakeholder Analysis of Paddy Processing Chain

Stakeholder	Contribution	Legitimacy	Willingness to engage	Influence	Necessity of involvement
Suppliers of raw materials (SH1)	High	Medium	Low	Low	Low
Logistics providers (SH2)	Low	Medium	Medium	Medium	Low
Warehouse (SH3)	Low	Low	Medium	Medium	Medium
Consumers (SH4)	Low	Medium	Low	High	High
Employees (SH5)	High	High	Medium	Low	Low
Industry associations (SH6)	High	Medium	High	Medium	Medium
Competitors (SH7)	Medium	Medium	Low	High	Medium
Government (SH8)	Medium	Medium	Low	High	High
General public (SH9)	High	High	Low	Medium	Low
Research Institutions (SH10)	High	Medium	High	Medium	Low

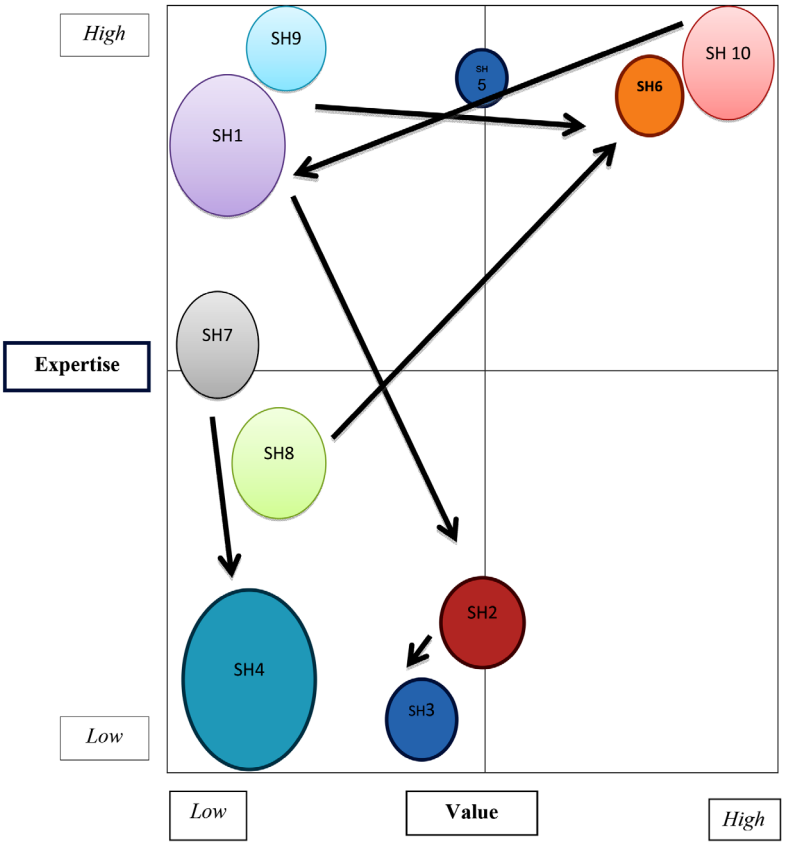

Fig. 1: Mapping of Stakeholders in Paddy Processing Chain

Legend

SH1 - Suppliers of raw materials
SH2 - Logistics providers
SH3 – Warehouse
SH4 - Consumers
SH5 - Employees
SH6 - Industry associations
SH7 - Competitors
SH8 - Government
SH9 - General public
SH10 - Research institutions

facilities and labour charges for handling paddy and rice.

As indicated earlier, the size of the circles in the grid reflected the value of the stakeholder in the paddy processing chain. All the business focused the end consumers, so does the paddy processing units which customized their product (rice) based on the end consumers. If the market demands the fine, slender and polished rice varieties, the processing was aimed towards satisfying the consumers. Thus the competition among the established PPUs was high and every player was trying to increase their market share in the given domain. There was close linkage between the suppliers of raw materials (machineries, raw paddy, packing materials) and logistics providers. Stronger the linkage, better the delivery and in turn warehouse services was solely dependent on the logistics.

The influence of government was high in this industry since rice is price inelastic commodity. Strong regulations was imposed by the government in various phases of chain starting from the procurement, transport, processing, pricing, license, trade and pollution measures. The suppliers of raw materials especially paddy were influenced by the research institutions releasing specific varieties for cultivation. The good agricultural practices, productivity improvement programmes, process innovations taken by both farmers and industries depended on such research institutions. Paddy processing units were categorized under red by the pollution control board because of the issues like air dispersion of rice husk ash, disposal of liquid effluents in the rivers used by the general public.

CONCLUSION

The stakeholder analysis revealed the relevance and importance of various stakeholders in the paddy processing chain in Southern Tamil Nadu with respect to their expertise and value contribution. The stakeholder analysis also captured the nature and degree of relationship among the identified stakeholders. Though many such stakeholders are involved in the paddy processing chain, the paddy processing units assumed an important and greater role in terms of reducing the wastages as it was identified as the stakeholder where better internal controls can be implemented and practiced in a sustainable manner. Also it was where most of the value addition takes place.

REFERENCES

Blair, J.D. and Fottler, M.D. 1990. Challenges In Health Care Management: Strategic perspectives for managing key stakeholders. San Francisco, CA: Jossey-Bass.

Carroll, A. and Buchholtz, A. 2009. Business and Society: Ethics and Stakeholder Management 7th edition, South Western.

Freeman, R.E. 1984. Strategic Management: A Stakeholder Approach, Boston, MA: Pitman.

Grimble, R. and Chan, M.K. 1995. Stakeholder analysis for natural resource management in developing countries. In Natural resources forum. Blackwell Publishing Ltd. **19**(2): 113-124.

Reed, M.S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K. and Morris, J. *et al.* Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of Environmental Management*, **90**(5): 1933 -1949.

Walt, G. 1998. Globalisation of international health. *Lancet*. **351**(9100): 434–7.