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# Rice Based ORS Taste & Flavor Preference Study

## Final Report

Prepared for:  
**Social Marketing Company**

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## EXECUTIVE SUMMARY

### BACKGROUND

As a part of its broad marketing strategy and continued product development programs, Social Marketing Company (SMC) is contemplating the introduction of rice based ORS, if found feasible. Several clinical studies are said to have indicated that rice based ORS is more effective than the glucose based one, in the treatment of moderately severe diarrheas. A US company – Ceralyte LLC – has recently begun manufacturing and marketing of rice based ORS, under the brand name of Ceralyte. SMC would like to introduce the product in Bangladesh, with the company's own brand name, initially under license, and subsequently manufactured in Bangladesh.

Ceralyte at present comes in both packaged powder form as well as in ready to drink liquid form. It is available in one natural and five flavored forms. SMC plans to introduce this rice based ORS as a rehydration drink both for the severe diarrhea market as well as for general rehydration needs of the adult population.

While planning this product's introduction, SMC felt that, since rice based ORS will be more expensive than the glucose based one, its appeal will be greater among the higher income and better educated groups (upper-middle to upper socio-economic classes (SECs<sup>1</sup>). Besides this assumption, there were a few other factors which needed to be established, i.e., which one of the six variants by flavor (natural, orange, mango, lemon, berry and chicken) and two forms (powdered and ready to take liquid) to choose? Acceptability of the concept, probable price, etc. Therefore, SMC decided to conduct a market research study prior to finalizing the plans regarding the new product.

The key objective of the study was to test the candidate concept and product options, and to select the most preferred variant by flavor & form.

Additionally, the study evaluated the preference for packaged powdered vs. ready to take liquid form, and used a model to estimate possible market shares, using flavor and price preference data.

The standard quantitative concept cum product testing method was used for the purpose of this study. A pre-designed structured cum open-ended questionnaire was used to elicit the required opinions. The interviews were face to face, with a randomly selected representative sample of target consumers.

While acceptability of the concept was studied both perceptually as well as physically (by tasting and comparing both glucose based as well as rice based ORS – in natural,

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<sup>1</sup> In Bangladesh, India and many other countries, socio-economic classes are defined by market researchers by using a cross-grid of monthly family income x education of main earner.



unflavored form, without mentioning brand/type), the candidate flavors were only physically tested in blind form.

The tests were conducted by using the Central Location Test (CLT) method. The respondents were initially selected through random household contacts. A listing and screening questionnaire was filled-in at the contacted households. Then, after proper scrutiny of these questionnaires, the required number of consumer panels were formed. The panel members were brought to the specially equipped CLT centers on designated dates, through prior invitation, to conduct the concept-cum product test.

The study covered carefully selected people from the following target population segments:

- ◆ Elders (55+ years old)
- ◆ Adults (21-55 years)
- ◆ Adolescent (11-20 years)
- ◆ Children (5-10 years)
- ◆ Infants (1-3 years)

The **sample size and distribution**, were based on the following key considerations:

- a) The sample sizes should be statistically significant and adequate;
- b) All social classes (A,B,C,D) should be considered, although the expectations were that the higher price of the rice based ORS will be more acceptable to the A & B classes;
- c) Urban & rural coverage should be ensured;
- d) Difference of taste / type of rice eating habits in different parts of the country should be considered;
- e) Both male and female (in equal proportions) respondents to be covered (especially in case of adults);
- f) Adults to be considered as the basic target group, because they are the purchase decision makers;
- g) The number of different candidate flavors and package options, available for testing were limited.

The study was conducted in Dhaka and Chittagong cities, as well as in selected villages under Mymensingh and Barisal Districts.

## **SALIENT FINDINGS**

### **Concept Test:**

The **blind base test**, as a part of the concept test, revealed that the Rice base (natural flavor) is in a slightly weaker position amongst the main target group, i.e., urban adults (and to some extent, the elderly), and especially amongst SEC A. However, its position was found to be similar (if not better) amongst the rural segments as well as amongst the children and infants. Nonetheless, to arrive at a more conclusive decision, other related issues were analyzed and considered.

Analysis of the acceptability of the concept (as perceived, after the concept was disclosed) revealed an almost absolute support for *“Rice based rehydration drink, as well as ORS in case of severe dehydration/diarrhea.”*

**Flavor Preference:**

After the concept test, the six candidate flavors (including the Natural) of the Rice based ORS, in powdered form (solutions were prepared before testing), were tested in rotating order, amongst all respondent segments. The flavors were tested in blind form (sachets were not displayed, nor were the flavors and brand mentioned).

The findings of this part of the study were more conclusive than the concept test. Four out of the six candidate flavors could be safely eliminated from the race. The most preferred flavor, across different target segments, was found to be **Mango**. Nonetheless, **Lemon** and (to some extent) **Orange** flavors were also found to be worthy candidates (if technical/financial/management considerations are more favorable in their case, or should management decide to have more than one flavor options in the market).

**Price & Market Size Modeling:**

The immediate question in view, after a thorough analysis of the key variables was “what are the chances of success of the new concept?” The answer was found with the help of two advanced market research models.

□ Cross Analysis of blind base and candidate flavor test data:

For this purpose, “space maps” were generated, with the help of an advanced market research data analysis software “ESPRI” (Easy System for Performing Research Investigations), developed by veteran market researchers and statisticians, based in New Zealand.<sup>2</sup>

The “space maps”, using advanced statistical correspondence analyses, help in plotting and visually understanding the exact position of different options/samples/brands (bases & flavors in this case), despite some or no statistically established differences between them. The correspondent analysis is especially helpful in comparing the different options, even if the respondents have not directly compared each other (each option evaluated on its own merit across a battery of specific attributes).

Considering the “hard but established” fact that “if there is no risk, there is no gain”, the “space map” findings strongly favored taking a “viable risk” with the Rice based Mango Flavored ORS. However, the launch of this new concept cum product has to be preceded as well as accompanied by adequate promotional campaign.

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<sup>2</sup> The Company is called Information Tools Limited. Visit website: [www.infotool.com](http://www.infotool.com) for more details. The software is used by leading companies (both buyers and sellers of research) in over 80 countries of the world.

□ Psychological Monetary Demand (PMD):

The PMD model, which was initially developed and introduced by the Market Research Society- MRS (UK), having proved to be very efficient in case of new concept cum product development studies, especially in “gestimating” the possible market size, was used in case of this study to measure the potential demand for the most preferred sample (Mango flavor) and the two other potential options (Lemon & Orange flavors).

The PMD outputs indicated that the most feasible price per (sachet) pack of the Mango/Lemon/Orange Flavored ORS (as tested) is Taka 7.00 (no difference was found across SECs and urban/rural strata). The possible market sizes of Mango and other flavors, at this and other price levels was calculated with the help of the following formula:

$$M = [(P1 \times P2) \times C] / 100$$

Where, “M” = the potential market size (annual)

“P1” = % of people who ranked a given flavor to be the best

“P2” = % of people who mentioned would buy at different price levels

“C” = Current ORS/saline market volume + volume of all other packaged ORS: Annual).

Given that “C”= 117 million sachets (m.s.) per year<sup>3</sup>; the confidence probability = 95%<sup>4</sup>; and the tolerable error of estimates = +/-5%(e=0.05), the following market sizes (annual) for different flavor options and price levels were derived:

➤ Mango flavor:

“P1” = 25.3%<sup>5</sup>

“P2” at Taka 7.00 = 80%<sup>6</sup>

“P2” at Taka 8.00 = 70%

“P2” at Taka 9.00 = 50%

“P2” at Taka 10.00 = 40%

“M” at Taka 7.00 = 25.3% of 80% of 117 million sachets = 23.6 m.s.

“M” at Taka 8.00 = 25.3% of 70% of 117 million sachets = 20.7 m.s.

“M” at Taka 9.00 = 25.3% of 50% of 117 million sachets = 14.8 m.s.

“M” at Taka 10.00 = 25.3% of 40% of 117 million sachets = 11.8 m.s.

➤ Lemon flavor:

“P1” = 20.9%

“P2” at Taka 7.00 = 68%

“P2” at Taka 8.00 = 54%

“P2” at Taka 9.00 = 45%

“P2” at Taka 10.00 = 32%

“M” at Taka 7.00 = 20.9% of 68% of 117 million sachets = 16.6 m.s.

“M” at Taka 8.00 = 20.9% of 54% of 117 million sachets = 13.2 m.s.

<sup>3</sup> This figure, in absolute terms –annual – made available by SMC.

<sup>4</sup> The space maps established that the samples are located as shown at 95% confidence probability.

<sup>5</sup> See Table # 3 (above), Adults (M+F), Urban+Rural, All SECs, Column: “Best”.

<sup>6</sup> See PMD for Mango, above.



"M" at Taka 9.00 = 20.9% of 45% of 117 million sachets = 11.0 m.s.  
"M" at Taka 10.00 = 20.9% of 32% of 117 million sachets = 07.8 m.s.

➤ Orange flavor:

"P1" = 17.7%  
"P2" at Taka 7.00 = 76%  
"P2" at Taka 8.00 = 62%  
"P2" at Taka 9.00 = 45%  
"P2" at Taka 10.00 = 31%  
"M" at Taka 7.00 = 17.7% of 76% of 117 million sachets = 15.7 m.s.  
"M" at Taka 8.00 = 17.7% of 62% of 117 million sachets = 12.8 m.s.  
"M" at Taka 9.00 = 17.7% of 45% of 117 million sachets = 09.3 m.s.  
"M" at Taka 10.00 = 17.7% of 31% of 117 million sachets = 06.4 m.s.

**Pack Test:**

A secondary objective of the study was to evaluate the acceptability of the two pack options, i.e., sachet (powder in pack) and tetra pack (ready to drink solution). Since the tetra pack sample was very limited in number, it was evaluated vis-à-vis the sachet pack only amongst a small but statistically significant number of adults (male and female, SEC A & B) in Dhaka City. **The findings below should be treated as indicative only.**

Analyses of the relevant data showed that the acceptability of the Tetra pack is slightly higher than the sachet pack, amongst the SEC A & B segments. This means that the Tetra pack may be introduced as an additional option, but not as the only option for the new concept cum product, because it will certainly be costlier, will be feasible for the upper echelons of the socio-economic hierarchy and, perhaps, will be more attractive as "*a rehydration drink*" (part of the total concept). The most acceptable price range for a Tetra pack drink was found to be Tk. 12.00 or below.

**CONCLUSION**

Despite the fact that the current Glucose based formulation was rated to be better than the Rice based Natural flavor, on the basis of a blind in-use test, the Rice based ORS concept, upon revelation, was rated to be very acceptable, because rice being the staple food in Bangladesh, it "sounded" more attractive than Glucose. This means that the slightly weaker position of the natural flavored rice based ORS may be overcome through proper and adequate promotional campaign, before and during launching, if SMC decides to introduce the new product.

Considering all aspects of the product test, the Mango flavored candidate came out to be the best option. However, SMC may also consider the Lemon and/or Orange flavors as additional options or better options (if cost / management / technical / other considerations are more favorable).

The most feasible price range for a sachet of Mango flavor is Taka 7.00, which would most probably attract around 20.3% (+/- 5%) of the current packaged ORS market, or around 23 million sachets per year (+/- 5%).



Nonetheless, the possible market sizes of the Mango flavored ORS at other price levels (Tk. 8, 9 and 10 per sachet), as well as those of the other two potential options (Lemon and Orange), have also been calculated to give a wide range of choices to SMC to decide upon.

The ready to drink Tetra pack may also be considered as an additional choice in the market at around Taka 12.00 or below. Additional analyses regarding possible market size at different price levels could not be done due to the shortage of product samples and, accordingly, a very small number of respondents. The pack test findings should be treated as indicative only.





## I. INTRODUCTION

### 1. BACKGROUND

Social Marketing Company (SMC) is a private non-profit company, engaged in the marketing and distribution of non-clinical contraceptives and Oral Rehydration Salt (ORS) branded ORSaline. ORSaline is a glucose based ORS, which is at present manufactured in Bangladesh. Other than ORSaline all other SMC products/brands are manufactured abroad and provided by donors to SMC at no cost.

As a part of its broad marketing strategy and continued product development programs, SMC is contemplating the introduction of rice based ORS, if found feasible. Several clinical studies are said to have indicated that rice based ORS is more effective than the glucose based one, in the treatment of moderately severe diarrheas. A US company – Ceralyte LLC – has recently begun manufacturing and marketing of rice based ORS, under the brand name of Ceralyte.

If found feasible, SMC would like to introduce the product in Bangladesh, with the company's own brand name, initially under license, and subsequently manufactured in Bangladesh.

Ceralyte at present comes in both packaged powder form as well as in ready to drink liquid form. It is available in one natural and five flavored forms.

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While planning this product's introduction, SMC felt that, since rice based ORS will be more expensive than the glucose based one, its appeal will be greater among the higher income and better educated groups (upper-middle to upper socio-economic classes (SECs<sup>1</sup>).

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