Syndicated Research Project of Hunan Rice Panel Data & Analysis Model
1. Brief Introduction

As a large rice producing province in China, Hunan’s rice planting area is over 300,000 hectares. In order to establish key market indicators of China’s rice industry, CCM carries out this project to dig deeply into Hunan’s rice production and to conduct panel data investigations around its basic information, pesticide, seed, fertilizer, diseases, pests and weeds, meteorology and agricultural product, and finally sets up multiple analysis models basing on the large amounts of data.

Syndicated Research is applied for this project, which means CCM would be in charge of providing proposals and implementation plans in the first phase and inviting other companies to get involved as sponsors. Once the project is completed, all the research findings and analysis models will be shared to all sponsors.

Syndicated Research Project of Hunan Rice Panel Data & Analysis Model, whose analysis model can be applied to any crop in any district, is one experimental field plan of China Agricultural Information Platform project—a project of CCM’s long-term planning. CCM will keep conducting similar projects on the main crops of different provinces in the future so as to build the overall China Agricultural Information Data Platform. Please stay focused on CCM.

2. Advantages & Features

- Crop-oriented, data research aimed at all crop related projects, sorting out relationships between different market factors in crop market
- Focused on Panel Data Theory, geographically accurate to county or city level
- Centered by crop data, research and summarize farmers’ habits and behavior of using fertilizers, pesticides, seeds and other products
- Adopt unique investigative methods and channels, go deep into the countryside and the local dealer for investigation
- The completed analysis model is not only suitable for Hunan Rice, but also can be applied to any crop in any region of China

3. Sponsorship Scheme

There are two kinds of sponsorships. Different sponsorship enjoys different service:

<table>
<thead>
<tr>
<th>Silver sponsor</th>
<th>Golden sponsor</th>
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</thead>
<tbody>
<tr>
<td>• All research findings and analysis models can be shared.</td>
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</tr>
<tr>
<td>• Sponsoring companies’ name and logo will be presented as “Cooperated Partner” in the outcome reports.</td>
<td>• Source data of panel research in the project will be shared.</td>
</tr>
<tr>
<td></td>
<td>• CCM could support sponsors to solve some specified problems after negotiation.</td>
</tr>
<tr>
<td></td>
<td>• Sponsoring companies’ name and logo will be presented as “Cooperated Partner” in the outcome reports.</td>
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</table>

The project will start on Feb.18, 2013 and requires 12 weeks’ time in total, and the final results will be submitted on May 18, 2013. Sponsorship Scheme is only valid before this project finish (present – May. 18, 2013). Regular subscription fee will be charged once the project starts.
4. Contents of Panel Data Research
(To be amended according to first phase qualitative research)

Analysis models derived from above data are as follows:

More secondary indicators can be calculated and generated from above basic information, and the following analysis models can be formed:

1. Pesticide usage status, costs, regional differences in each growth stage of rice
2. Fertilizer usage status, costs, regional differences in each growth stage of rice
3. Pesticide/Fertilizer usage status of different rice varieties (or different brands)
4. Total local market volumn, market value of pesticide / fertilizer / seed (select date from representative regions to make a statistic analysis and calculate the total)
5. Market share of different brands of Pesticide / fertilizer / seed in the locality
6. Main varieties or species of local pest/weed diseases and relevant common used pesticides
7. Pesticide costs for each pest/weed disease
8. Actual pesticide proportion for controlling pest/weed disease
9. Cost structure, total cost, gross profit of rice planting
10. Retail channels for farmers to buy pesticide / fertilizer / seed
11. Yield differences and use differences of pesticide and fertilizer in different regions
12. Pesticide/fertilizer usage customs, differences of different brands and varieties (dosage, frequency, product)
13. Species difference between early rice and late rice, seed selection differences
14. Pesticide/fertilizer usage customs of early rice and late rice (products selection, dosage, frequency)
15. User evaluation of the performance of different brands of pesticides / fertilizers / seeds
16. Users’ value orientation towards pesticides, fertilizers, seeds
17. Main difficulties that users face in rice planting
18. Support that users expect to get from agricultural manufacturers

......More analysis models and indicators will be proposed after data has been acquired
5. Research Thinking and Methods

The whole country can be geographically divided into 31 provinces and municipalities, in which there are a total of 336 cities. And each city is subdivided into various counties. Sample survey about various crops planting situation will be conducted in every county with results summarized into nationwide and provincial research information for all crops.

The panel data research covers three main rice-planting fields in Hunan Province — Hengyang, Yueyang, Changde, as well as rice planting area of different counties, brands and costs of seed, dosage, ratio, cost, pest and pest diseases control degree of pesticide/fertilizer in different growth stage of rice, pest and pest diseases occurrence in recent years, etc.

First we plan to learn the agricultural status, rice planting situation and actual situation of farmers of three representative main productive areas through qualitative methods, and so that we can set latter quantitative data collection points and make questionnaire designing, and then collect data by quantitative method.

CCM hasn’t made any in-depth research into terminal study before. In order to ensure data accuracy and eliminate fake data, this project will focus more on site research. Once questionnaire model, databases and channels are slowly established, data can be updated through establishing contacts in different regions and thus research cost can be reduced.

Execution methods

After comparing a variety of research modes, this project will adopt methods of qualitative interview plus quantitative survey.

- **Qualitative interview: In-depth interviews**
  Number of samples: 6 distributors in every city (in seeds, fertilizers, pesticides) plus two farmers, which totals eight samples
  Interviewee requirement: To be confirmed after desktop research

  **Content:**
  1. Learn local planting crops, planting structure, plant population structure, and detailed product catalogue (pesticides, fertilizers, seeds, pests)
  2. Photograph the product packages of pesticides, fertilizers and seeds, preparing for quantitative interviews
  3. Try visiting farmers, which provides necessary reference for quantitative questionnaire designing in the second phase

- **Quantitative survey: Paper questionnaire. Outsource local agency company to perform it. CCM research team will take some trial visits and provide interviewer training for local agency company.**

  Number of samples: 30 farmers per county (specific screening conditions will be determined after qualitative research); sample selecting principle please see “Appendix”.

  **Content:** content outline is shown as above; preliminary design, trial visit will be done according to above picture, and modification and improvement will be made by combining results of quantitative research and actual situation of farmers.
6. Survey scope

Planting status of main crops in Hunan Province in 2011 (Rice planting area over 300,000 ha)

<table>
<thead>
<tr>
<th>Region</th>
<th>Crops Sown Area</th>
<th>Grain Sown Area</th>
<th>Rice Multiple Cropping Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changde</td>
<td>1,077.54</td>
<td>598.60</td>
<td>534.30</td>
</tr>
<tr>
<td>Hengyang</td>
<td>823.87</td>
<td>530.40</td>
<td>468.12</td>
</tr>
<tr>
<td>Yueyang</td>
<td>775.29</td>
<td>477.17</td>
<td>445.18</td>
</tr>
<tr>
<td>Yongzhou</td>
<td>833.59</td>
<td>539.11</td>
<td>419.31</td>
</tr>
<tr>
<td>Shaoyang</td>
<td>704.78</td>
<td>488.21</td>
<td>411.57</td>
</tr>
<tr>
<td>Changsha</td>
<td>578.99</td>
<td>353.95</td>
<td>340.19</td>
</tr>
<tr>
<td>Yiyang</td>
<td>606.25</td>
<td>366.12</td>
<td>333.99</td>
</tr>
</tbody>
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Rice is mainly used for sales in the northern part of Hunan, while self-supply for the southern part. Therefore, Changde, Yueyang are selected to represent the North of Hunan, while Hengyang for the South.

Investigation area of this project covers: all counties under Hengyang, Yueyang and Changde, which in total are 30 counties.

7. Final presenting form

Details are as shown above

1. Understand relevant crop planting information around each province/city/county by focusing on region (Shown as above)
2. Learn relevant crop planting information around nationwide/province/city/county by focusing on certain crop

The survey results of Hunan region in this project will be presented in the form of analysis model and panel data.
# 8. Project Plan

## First Phase: Qualitative Research
- Desktop Research, Qualitative Interview Outline, Quantitative questionnaire designing draft
- Making project execution plan
- Looking for project executive agent in Hunan

## Second Phase: Quantitative Research
- Quantitative questionnaire final draft
- Interviewer recruiting
- Quantitative project implementation
- Quantitative data report

## Project execution time:
Feb. 18, 2013 – May 18, 2013

### First Phase

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Desktop Research</td>
<td>1 Week</td>
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<tr>
<td>Outline, questionnaire designing, interviewer recruiting</td>
<td>1 Week</td>
</tr>
<tr>
<td>Qualitative interview execution (First Stage)</td>
<td>2 Weeks</td>
</tr>
<tr>
<td>Product catalogue and sorting out of interview content</td>
<td>1 Week</td>
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</table>

Around 5 weeks in total

### Second Phase

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Quantitative survey execution + QC + input (outsourcing) (30 samples per county)</td>
<td>3 Weeks + 1 Week + 1.5 Weeks</td>
</tr>
<tr>
<td>Proofreading &amp; report-making</td>
<td>5 Days</td>
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</table>

Around 7 weeks in total
Attachment: sample selecting principle

Samples will be selected by ESOMAR general standard. And relationship between sample volume and maximum sampling error is shown as below:

Under the 90% confidence level, maximum sampling error for 30/50/100 samples are 14.97%, 11.60% and 8.2% respectively.

Sample volume is set at 30 samples per county as we want to ensure random samplings in experimental field survey, and thus the total volume will be 900 as there are 30 counties in 3 cities.

The interviewers are mainly farmers as they are most familiar with specific planting process and thus they have a bigger say.

Project implementation plan: adopt qualitative research in the first phase as farmers have lower cognitive level and they need more information tips and easier questionnaire. And in this way more accurate first-hand data can be obtained.