



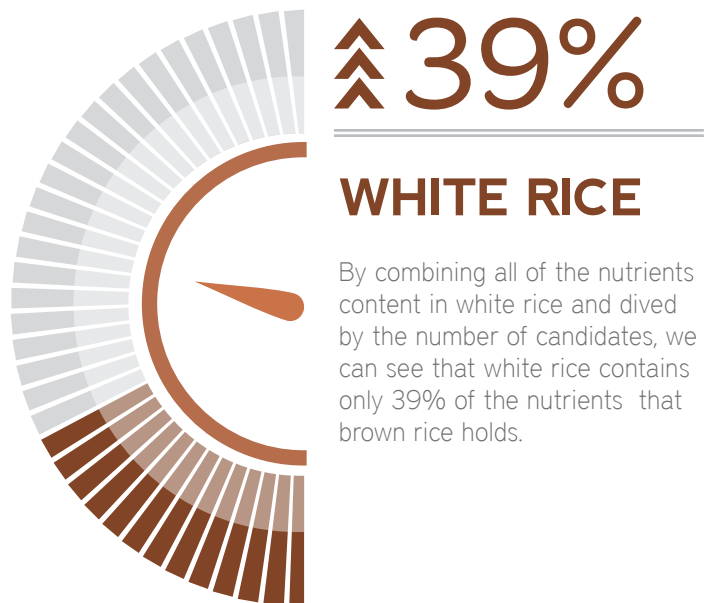
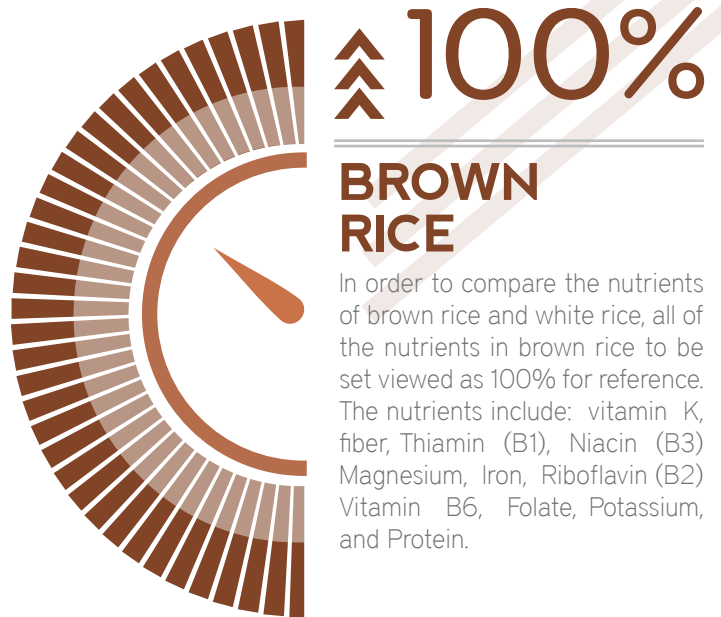


BROWN RICE VS WHITE RICE

Most people have been eating white rice since they were young, and everyone knows that brown rice offers more health benefit. However only few have an idea regarding the magnitude of this difference. We will be comparing the difference in terms of nutrients between white and brown rice in this section.

THE DIFFERENTS between white and brown rice lies in their aroma, taste and texture. While many claimed that brown rice smells different from the white rice they are used to they refuse to consume white rice, however the majority of people who have actually tried brown rice actually prefer its strangely appealing taste over white rice. Despite many reasons that turned people away from brown rice – be it the higher price or longer cooking time – brown rice holds many more essential nutrients to human body.

Brown rice contains 20 times more vitamin K than white rice, moreover white rice holds less than 55% of all nutrients present in brown rice except for protein content (compared to brown rice, white rice hold up to 90% protein present in brown rice). When comparing the two it should be obvious that brown rice is the better choice. There are even studies showing that the nutrients in brown rice can help in many chronic deceases.



Good to know:

The reason that brown rice is more expensive is because in the brand, there contains some kind of oil along with the vitamins. That oil reduces the shelf-life of brown rice.

2011 Oldways/The Whole Grains Council, All values from USDA Nutrient Database, SR 23



The support from government can be seen from the regulation. With support by awareness from the consumer about healthy life style, combine by the government regulation could make organic food developing into further level. Although the price is rather high than the conventional food, the national campaign for organic food also give significant effect to the development of organic food. The government also socializing eco farming to the farmer, ensuring and keeping the buying price for the farming product high.

NOWADAYS, the understanding of farming product is growth from knowledge increasing quantity production to fulfil the food needs into the increasing of quality and the safety of food itself. Quality that consist of taste, nutrient and vitamin contents. Food safety cover of the chemical residual contain in the food caused from the farming process, pesticide, herbicide which endanger human health.

Before starting business in organic product we need to pay more attention to the regulation that valid in the nation that we want to start business. We should concern about domestic

regulation, however as a developed country and reputed as modern agriculture industry, United States regulation usually seen as guideline by the other countries.

The United States organization who regulate the farming, particularly organic farming is known as United States Department of Agriculture (USDA). This organization recognize four categories of organic products, the first one is crops, means: food harvested from plant, livestock feed, fiber, or any used substances to add nutrients to the field. Second is livestock means food coming from animals or in the production of food. Third is processed products

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which consist of all items that have been handled and packaged, processed, and packaged. The last is wild crops or plants from a growing site which not cultivated. For this regulation we are more focus on the crops regulation.

Farming regulation

A description of the monitoring practices and procedures to be performed and maintained, including the frequency for what they will be performed. It also discussed how to implement cultivation practices which maintain the chemical, physical and biological condition of soil, and minimize soil erosion as well.

One important thing from farming regulation is about the crop rotation. The practice of alternating the annual crops grown on a specific field in a planned pattern or sequence in successive crop years so that crops of the same species or family are not grown repeatedly without interruption on the same field.

The producer must implement a crop rotation, green manure, improve soil organic matter content, then providing pest management in crops, finally managing the deficient or excess plant nutrients and provide erosion control. This regulation hope that having well defined boundaries to prevent the unintended application of a prohibited substance to the crop or contact with a prohibited substance that is not under organic management.

Substance

The criteria in the evaluation of substances or ingredients for the organic production: Synthetic and non-synthetic substances considered for inclusion from the National List of allowed and prohibited substances.

The usage of synthetic substance used as a processing aid will consider these criteria: first is that this substance cannot be produced from a natural source and there are no organic substitutes. Then substance which is allowed if it don't have adverse effects on the environment and has compatible with organic handling, and also the nutritional quality of the food is still

maintained when the substance is used, and the substance itself doesn't have an adverse effect on human health as defined by applicable Federal regulations. The other condition that synthetic substance allowed is the primary use is not as preservative. Moreover the substance is listed as generally recognized as safe (GRAS) by Food and Drug Administration (FDA). Another requisite is the substance that essential for the handling of organically produced agricultural products. While Non-synthetics used in organic processing will be evaluated.

Certification and labelling Process

Cost for certification

The certification costs is depending on the certifying agent and the size, type and complexity from the farming operation. According to USDA website, the costs has range from few hundred to thousand dollars. Before applying they suggested to understand the fee structure and billing cycle. Generally, the fee is an application fee, annual renewal fee, assessment on annual production or sales, and inspection fees. The benefit of certification is after you are certified, the USDA Organic Certification gives Cost-Share Programs which farmer can reimburse operations up to 75 percent of their certification costs.

Labelling

In United Stated if we want to seek for organic products in the marketplace, consumers should find for the USDA Organic Seal or a certifier name on the label. The U.S. Department of Agriculture categorized four kind of organic labels. This labelling based on the percentage of organic content in that product. This means that not only the organic ingredients in processed products certified, but also the facilities that handle and process the products are inspected and certified as well.





4 PROCESS AND TECHNOLOGY

There are different steps in rice processing. In This section we will be talking how brown rice, white rice and enriched rice are made. However enriched rice may not sound familiar to a lot of people, so please refer to “Good to know: Enriched rice” section on this page.



Good to know:

Along with the bran, the milling process removes over half of the essential vitamins from rice. And enriched rice are rice that have been processed in order to put the back the loss vitamin in to white rice, however they are still worse comparing to the original brown rice

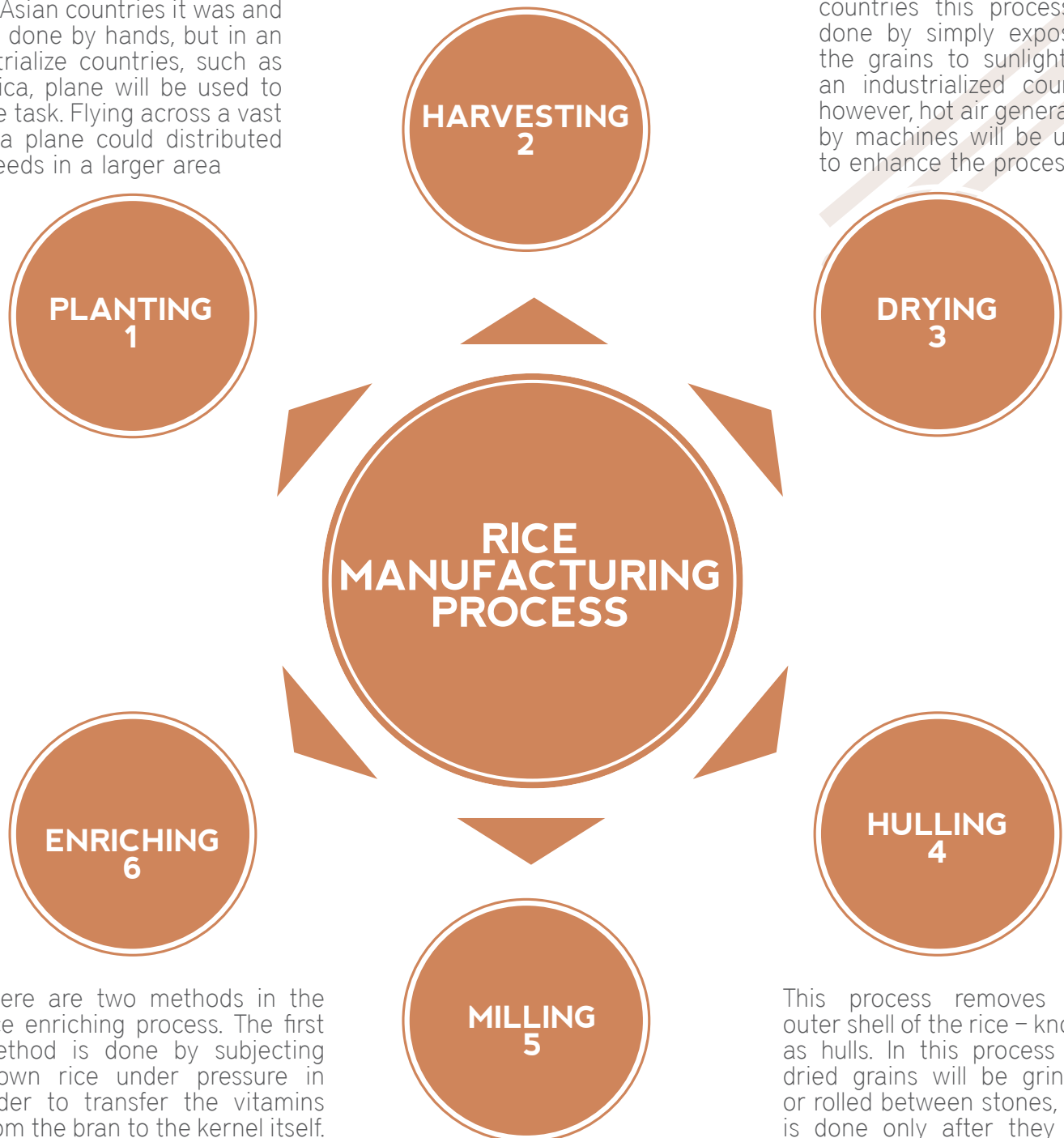


BRIEF, information prior the planting is that the land needs to be prepared before the seeding takes place. This is either done by machine or manually. In the early stage of rice cultivation, the land will be shaped into paddies. And the field will be flooded with water (around 20 Cm). The seeds will be soaked before planted in to the prepared bed. When it's time that the rice are ripe enough, the harvesting will commence. After being dried the rice will be hulled producing brown rice. And if either white or enriched rice are desired they will run the rough rice through 2 hullers.

After the fields are prepared, the soaked seeds will be deployed separately throughout the fields. This can be done by either hands or machines. In most Asian countries it was and still is done by hands, but in an industrialize countries, such as America, plane will be used to do the task. Flying across a vast field, a plane could distributed the seeds in a larger area

After 12 to 13 months the ripen rice grains will be ready for harvesting. This again can be done by both manually and machines. By hands the stalks will be cut using sharp blades. This classical conduct still take place in most countries in Asia. In an industrialize country, automated mechanical harvesting machines will be used. By going through the machine the rice stalks will be harvested and staked in place before separating the grains from the stalks.

Before proceeding the rice grains need to be dried. In most developing countries this process is done by simply exposing the grains to sunlight. In an industrialized country however, hot air generated by machines will be used to enhance the process.



There are two methods in the rice enriching process. The first method is done by subjecting brown rice under pressure in order to transfer the vitamins from the bran to the kernel itself. The other way was to submerge the milled rice (white rice) in to vitamin bath.

By running the brown rice in to another huller their brans will be removed resulting in white rice.

This process removes the outer shell of the rice – known as hulls. In this process the dried grains will be grinded or rolled between stones, this is done only after they are cleaned. Often this process is done by machines. The hulled rice are called brown rice.



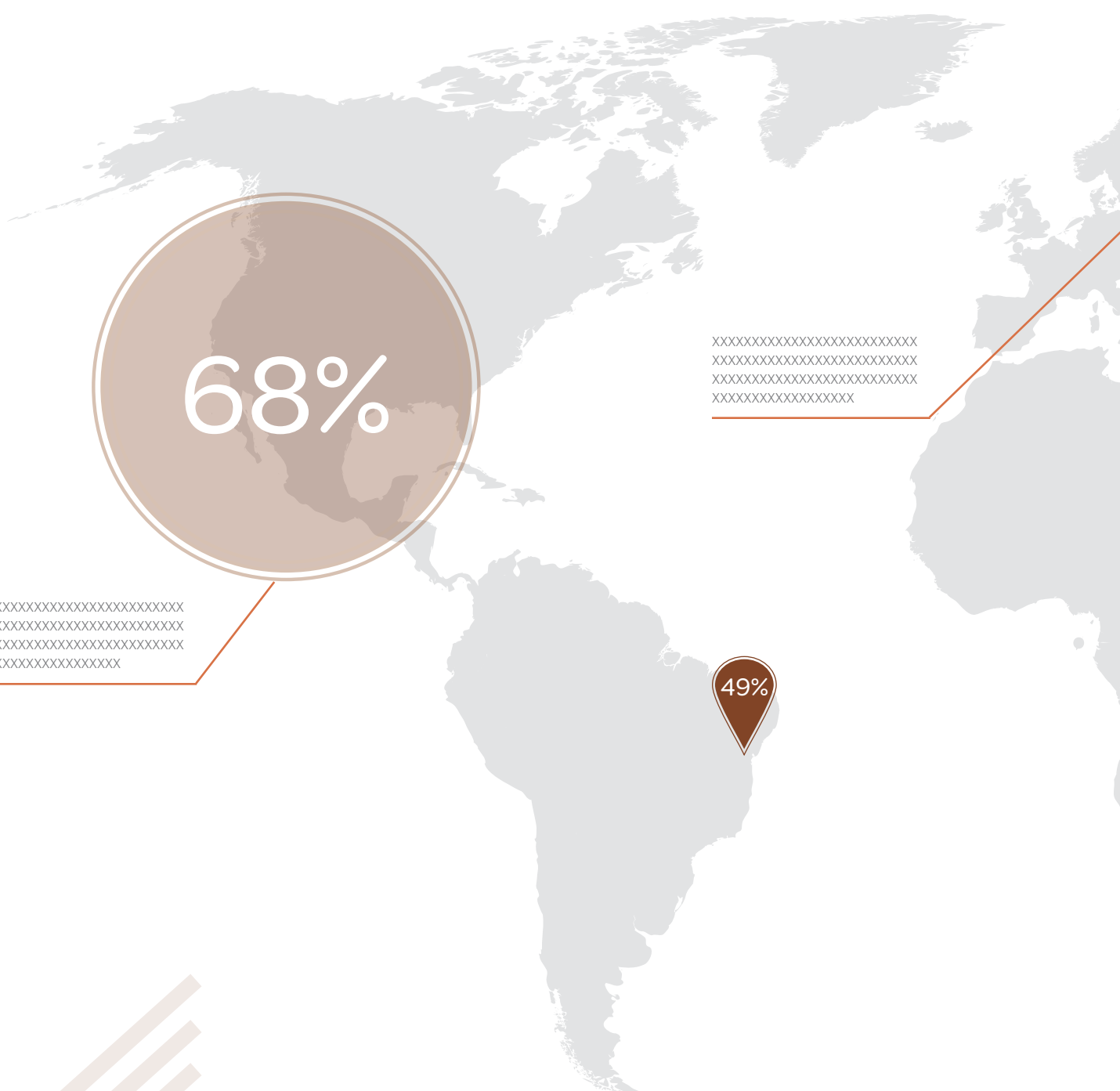




5 MARKET ANALYSIS

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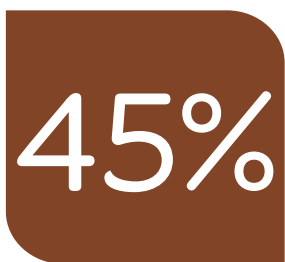
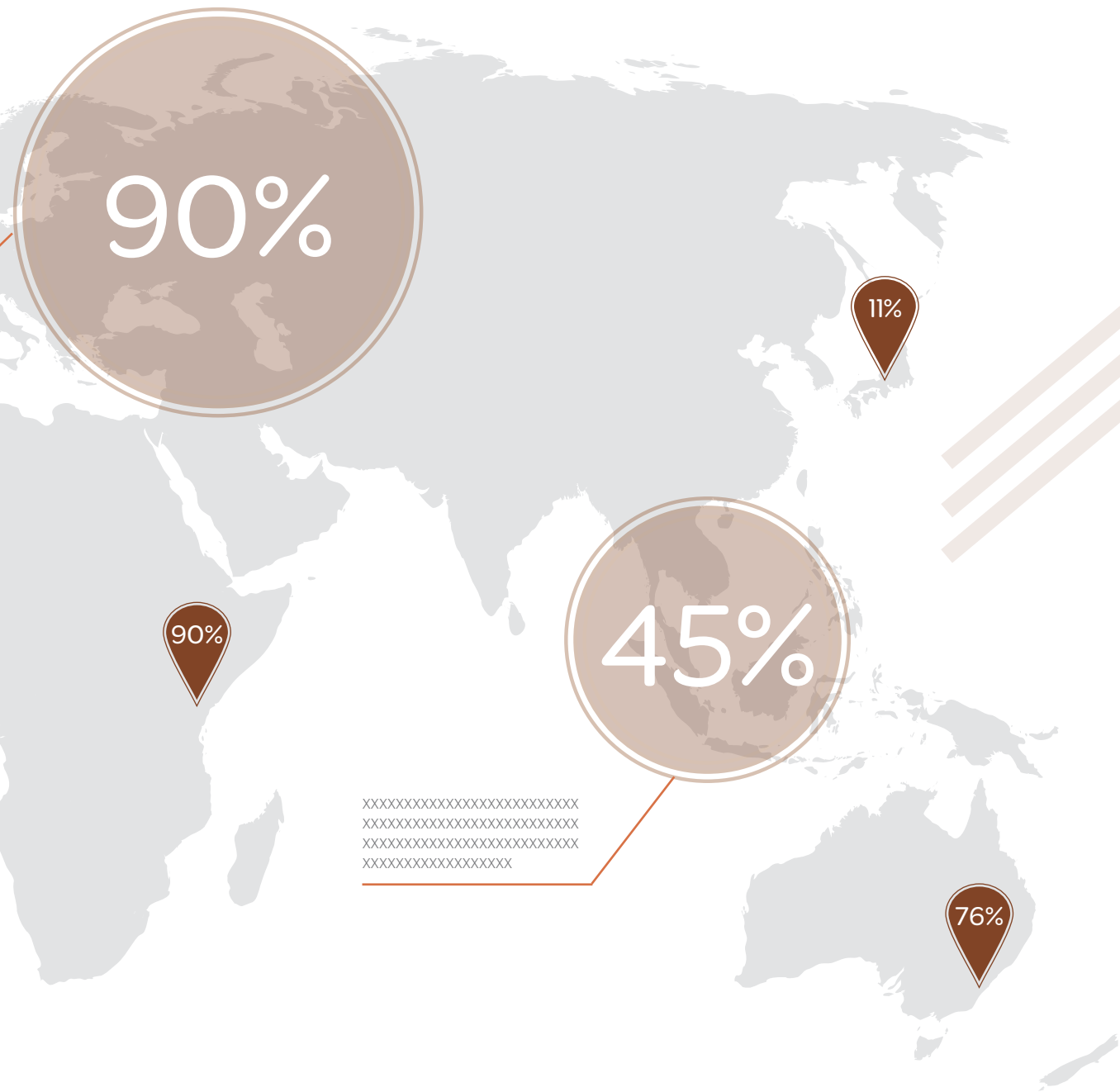
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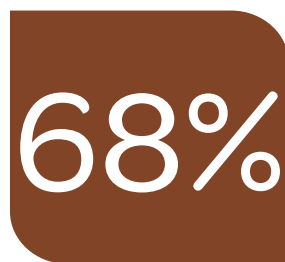
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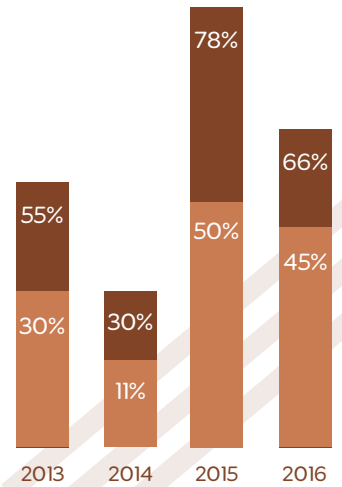
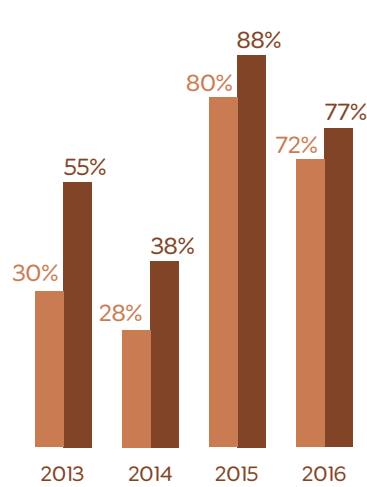
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6 DISCUSSION AND CONCLUSION

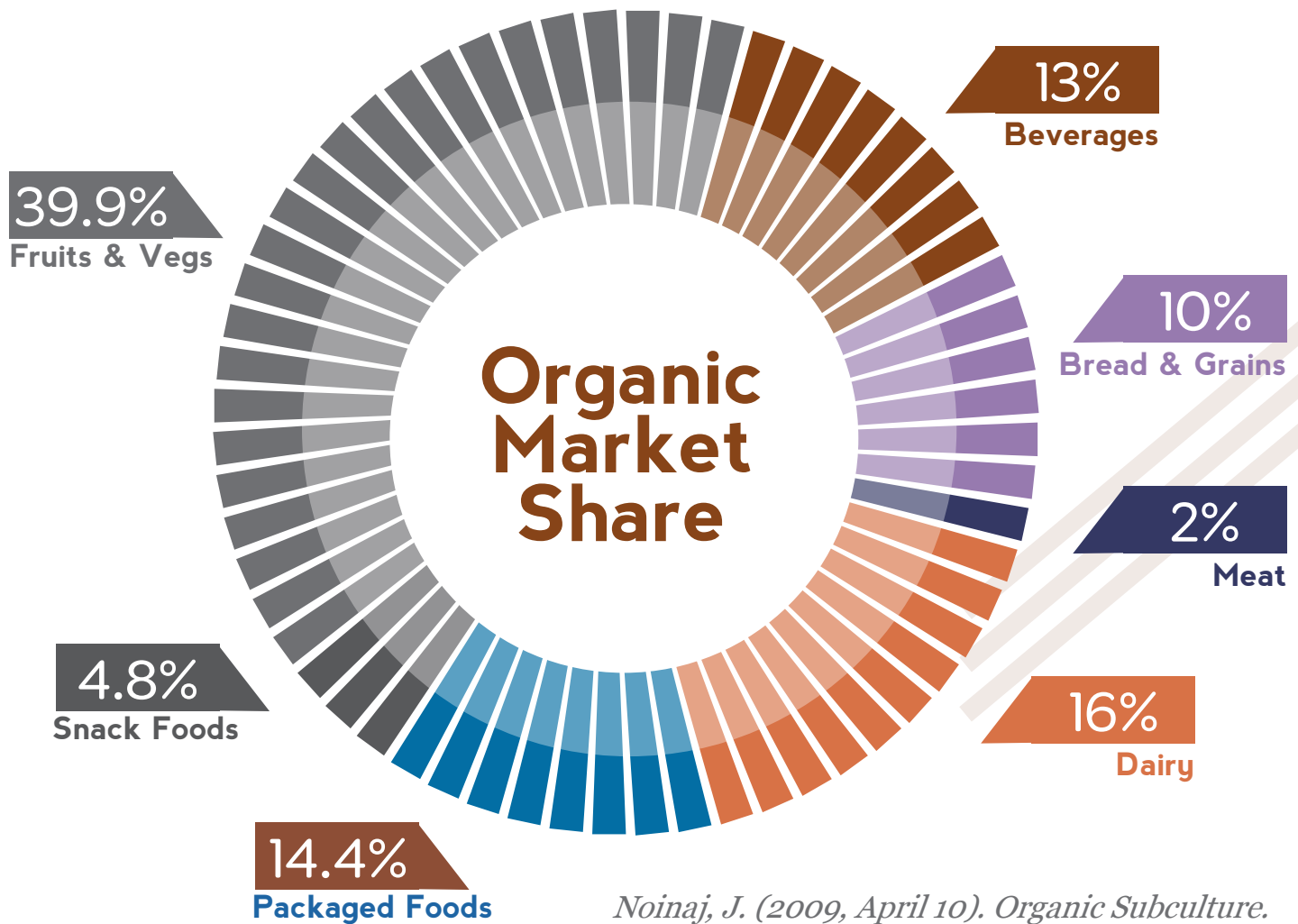
The section below will be given to conclusion and discussion. Most of the content in here will be from the authors' opinion regarding the organic brown rice market - based on the data found from online sources.

THE AIM of this industrial analysis report is to see the market trend for organic brown rice, as well as to describe the benefits of brown rice over white rice, and to convince the reader that there are still clear and far future for this product. However with no specific data regarding this topic, other sets of relevant data are used for analysis. ALL OF THE DATA/STATISTICS DISPLAYED IN THIS REPORT ARE TAKEN FROM OTHER SOURCES LISTED IN THE REFERENCE SECTION.

As far as statistic shows, the consumption of rice has been gradually climbing. Throughout the years its pace may be hindered by the economic crisis, but the fact remains that it is making its way up in the food industry. Seeing how much rice is consumed comparing to the increased in the trading value of brown rice in addition to the decrease in white rice (please refer to Consumption trend on Pg.27-28), one could say that the future of brown rice in the market is still bright. For the organic market, there are also data indicating the growth in this field, be it the growth in investment or land used for organic farming. As mentioned in

the Variables section (on Pg.25-26), there are many factors in play when it comes to marketing. So even if there are no data specifically gathered for "organic brown rice" it is possible to see the trend of this market.

As one country develops further its concern for health increased proportionally. This can be proven by the increasing sells on organic foods. Price may be the only factor hindering the growth of organic product. But this hindrance could be overcome by the economy of scale, if more people choose to consume organic product, the price will surely be reduced. However every factors are related to each other. For example if the consumption rate of the customers increase the price will increase. Then seeing that there are more consumers the manufacturers will likely to invest more to produce more; this will cause the price to drop due to more competitors and lower cost. The improvement in technology will also the manufacturers to produce rice at a quicker pace, and sometimes lower cost. Moreover the regulations regarding the manufacturing procedures of the product itself may influence the cost, which will consequently effect the vending price.



The pie chart above expresses the different types of organic food in the organic market in percentage. While organic fruits and vegetables seem to dominate the market with over 39% of the organic product, bread and grains made up to only 10%. Knowing that the volume of rice consumption is increasing, and the organic market is growing in parallel to it, is a signal that was hinting the direction of this market. However this data is a snap shot of the organic market in 2007, so the value may be different now.

It is difficult to distinguish organic food with conventional food especially when consumer want to purchase it from the shop or grocery. Although a lot of study about organic food state that consuming organic food will give a better nutrient content, less heavy metal residual, and certainly a better taste than conventional food, the only way to differentiate it is by looking for the labels which gave by the organic authorized assessor. Therefore, organizations who gives the labels should be able to gain trust from consumers. In the era of technology information, we think the use of block chain technology will give a lot of benefits. The principal of openness and transparency from block chain will attract public, so they can personally check the certification process. This will highly boost the consumer's trustworthiness. In addition the utilizing of information technology, such as "layar" application can facilitate consumers to verify the organic logo that given by authorized organization.



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