

A FARM MANAGEMENT GAME FOR PNG

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The rapid increase in rural development in PNG has put a greater demand on the farm management skills of farmers and extension officers. These skills are mainly —

1. Being able to make management decisions, and also to teach farmers how to make these decisions.
2. Helping farmers plan the physical and financial development of a farm based on the farmer's goals.
3. Making budgets so that farmers can apply for a loan from the Development Bank if necessary.

One method that can be used to teach these skills is to do case studies of a real farm. This involves visiting a farm, talking with the farmer and finding out what decisions he has made and observing the results of these decisions, preferably over a period of time.

Case studies are very useful for teaching certain aspects of planning, such as the collection and organization of information, but are not always as good as they should be because the *students themselves are not*

involved in the decision making. They are only observing the mistakes or successes of someone else. They do however usually find out *why* a certain result occurred.

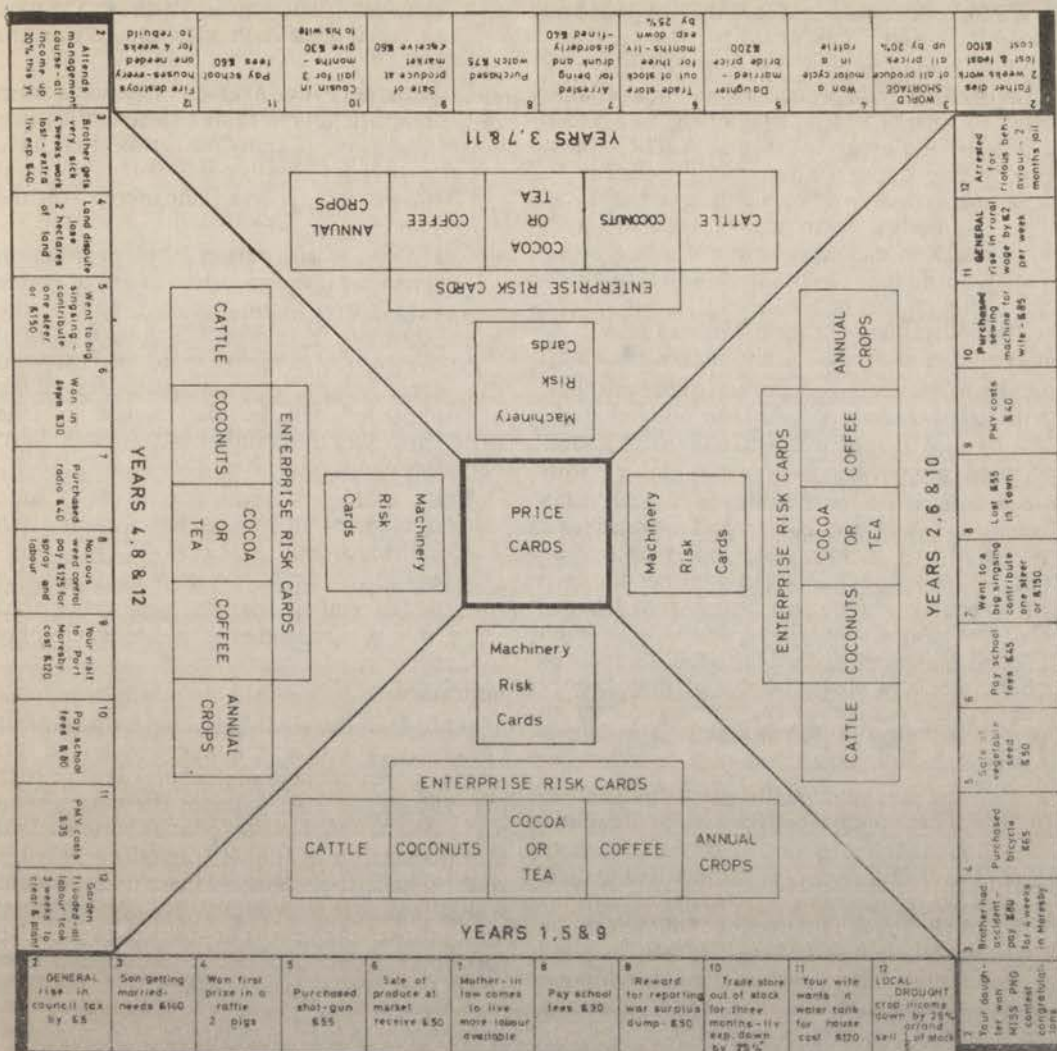
Another method is to get the students involved in a farm management game. This is a model of a farm business which is used to give an idea of the outcome of management decisions made by the people involved in the game.

A farm management game for PNG

In 1973 lecturers at the Popondetta Agricultural College produced the first version of a farm management game that was applicable to PNG.* Since then the game has been revised—based on experience, and on suggestions from students and staff at Highlands Agricultural College, Popondetta Agricultural College and Vudal Agricultural College Field Station. It is now an established part of the farm management courses at these colleges. It has also been successfully played by groups of field officers from the



Popondetta Agricultural College students play the game in the classroom.



The board for the farm management game.

Department of Primary Industry as part of their in-service training.

From the outset the aim was to make the game as realistic as possible without making it so difficult to play that the teaching value would be reduced.

The "managers" start by inspecting an actual area of relatively undeveloped land, about 30 ha in size. This is their farm, of which they must plan the development for the next 10 years. They are told that they have a labour force of nine people consisting of the owner (themselves), his wife and four children, his brother and his wife, and his uncle. They can

estimate the amount of work these people can do in the form of man days. Each "manager" also has K500 cash to start with.

A "manager" can consist of an individual or a management group of up to four people. Because each manager has the same resources to start with, later success or failure will depend on the types of enterprises chosen and the decisions made.

The managers are given a choice of enterprises suitable for their land. On the coast these are cattle, coconuts, cocoa, Robusta coffee, chillies, and annual crops such as sweet potato and peanuts. In the

highlands coconuts are replaced by tea, and Robusta coffee by Arabica.

The managers then have to decide which enterprise or enterprises they will put on their land, and make a physical plan and budget for a period ranging up to 10 years. To help them do this they are given a map of the area and a series of budget forms which they can follow. The last budget form will tell the manager how much money will be needed to put his yearly farm plan into practice, and if he needs a loan how much he will need. If he does need to borrow money the form will also show how much he can afford to pay back each year.

When the managers are satisfied with their plan and budget they are then able to test it out by playing the farm management game.

The game consists of a board with four sides, each side representing one year. Play begins at year 1 and each manager receives a set of record sheets, yield tables and K500 cash (play money). Players who need a loan (from their budgets) will receive that amount also in cash. It has been found that even though managers must keep accurate records of income and costs the use of play money adds to the realism of the game and cash in hand can always be checked against the records.

Playing one year of the game involves—

1. The game controller, who is the bank manager, trade store owner, produce buyer and supply firm, throws the dice. This represents the seasonal conditions of the year. The number will determine the crop yields and calving rate for every manager for that year. Each manager can easily find his actual production by looking up the yield tables.
2. The game controller takes the top "price card". This will determine the prices all managers pay or receive for produce and stock during that year.
3. Each manager then throws the dice—this number will land them in one of the "general risk" squares for that year (around the board). If the "risk" involves cash this will be paid or received in play money and also be entered into the records. Although some of these "general risks" are not entirely realistic, they certainly add enjoyment and interest to the game.
4. Each manager also take a "risk card" for each enterprise or machine they have, and this will tell them what happened to those crops, cattle or machines during

that year. The results of these are paid or received in cash and entered into the records.

5. Managers then transfer any costs from their budgets to their records, allowing for changes due to the "risks" that have occurred. These costs must be paid *before* they receive their income for the year.
6. Income is calculated from production (yield tables) and prices received (price cards), and living expenses paid to the "trade store" (simply a box with a slot in the top). These are paid in cash and recorded by the managers. The living expenses can be determined by the controller and could be 10 % or 20 % of the income received that year.
7. If managers are due for a loan repayment this must be made in cash and recorded.
8. Managers work out their cash in hand at the end of the year and check that their records agree with their cash (play money).

Summary

As in real life, what happens in the game is not always what the managers budgeted for, and if so they must change their plans as they play the game. This requires the manager to make decisions based on past experience and all information available (including possible risks). This is the essence of farm management which cannot be taught by conventional methods of teaching. The managers are also fortunate in that they will get an idea of how good their decisions are when they play the next year.

Acknowledgements

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The students of PAC, HAC and Vudal Field Station, who have played the game and provided us with the experience to improve it.

- * In 1971-72 Martin Hallet, teacher at Goroka High School, developed a simple FMG based on annual crops, which is very useful for teaching the principles of gross margins.