Simulation Debriefing: Comparing 3rd World Farmer to Rural Life in Sub-Saharan Africa

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December 1st, 2014

“Play is the highest form of research” –Albert Einstein

Online games and simulations have become increasingly popular with teachers and professors in the undergraduate classroom. Many find that they are an excellent way of illustrating complex and challenging materials in an alternative way (Wainwright, 2014). 3rd World Farmer (TWF) is an online game that hopes to simulate what it is like to be a farmer in the third world. Its goal is to generate an emotional reaction from player in industrialized countries when they realize the plights those living in the rural third world might face (3rd World Farmer Team, 2014). The game is set in Africa, however, the issues explored in the game are common in many developing countries. The purpose of this paper will be to explore how well 3rd World Farmer simulates the reality of farm life in the developing world. I will argue that although TWF does an excellent job of showing the volatility in external factors and the impacts these factors can have on farmers in the third world, the game fails to demonstrate the often permanent effects of external, uncontrollable factors, and further ignores many impacts of family based issues on the lives of these people. In order to accomplish this, I will compare TWF to rural life in Sub-Saharan Africa (SSA). Three major themes will be explored; farmland and factors that can increase or decrease its size and ability to yield crops, the impacts of illness on family life, and fertility rates in SSA.
Theoretical Premises

3rd World Farmer is a game and necessarily simplifies the lives of rural famers. As such, it cannot fully demonstrate the many complexities of the lives of farmers in the Third World. However, this paper will seek to outline some of the simulation’s strengths and weaknesses by comparing it to existing literature on life in rural Sub-Saharan Africa. This paper hopes to suggest some simple improvements that could be made to the simulation in order for it to better represent the reality of families in this area.

For the purposes of this paper, the farm in the simulation will be considered a smallholder farm as it fits the definition laid out by Handelman (2013). Handelman states that smallholder farmer are “those who own small amounts of land for family cultivation” (Handelman, 2013, p. 180). The smallholder farm is distinguished from midsized farms and affluent peasants, who both have hired help. It should also be noted that smallholder farmers are different from the landless who either rent or work on land (Handelman, 2013). As no rent is specified in the game, it is assumed that the family owns the land.

General strengths of 3rd World Farmer

Many similarities can be found in a comparison between TWF and rural life in SSA. One of the simulation’s strengths is that it does an excellent job at demonstrating the impacts uncontrollable external factors can have on the lives of rural farmers. In the game, farmers will lose crops or livestock due to disease and drought, for example. Civil war and looting activities can also impact a player’s farm, as tools can be taken away from them. These are all realities that can be faced by rural farmers in SSA, as the region suffers from many environmental irregularities, disease, and civil war (Handelman, 2013; Devitt 2012).
Another similarity between TWF and farmers in SSA is that in both cases their crop prices are reliant on the world markets. In reality, rural farmers in the SSA are vulnerable to fluctuating global markets and trends (Handelman, 2013). Some years, if the market is doing well, farmers’ crops will sell for more. Other years, if the price of their crops drop on the world market, the family will not receive much return for their investment, particularly if they do not have crop insurance. Many governments attempt to deal with this sort of fluctuation; some, particularly in Africa, attempt to place price controls on crops, while others subsidize certain industries. Government policies in the game are unclear. However, due to the unstable nature of many governments in SSA, it is not unrealistic to assume that these types of regulations would not be consistent (Handelman, 2013). As such, the constant fluctuation of crop prices, as well as the detrimental impacts of the crash of the World Bank demonstrated in the simulation, does not diverge from the reality of the lives of many farmers.

Many authors would argue that TWF is an excellent teaching tool as it suggests that smallholder rural farmers can greatly contribute to the reduction of poverty in rural areas. Some suggest that smallholder farms are in fact the best way to tackle poverty and food insecurity in SSA (Christiansen, Demery, & Kuhl, 2011). In fact, some argue that the inability of rural farmers to access to proper seed and technical advice is inhibiting farmers from achieving this (Theriault & Tschirley, 2014). Other scholars encourage greater investment in medical services as a way minimize poverty and increase crop yields in the developing world (Himmelgreen et al., 2009). The concept that rural farmers can reduce poverty is demonstrated through TWF, as a player’s objective is to invest in infrastructure, communication, schools, and medical clinics. The investments of this one family help the entire area as they lower the cost and increase the
availability of medicine, education, and crops. Moreover, investment in communication is meant to allow coordination with other farmers.

**Farmland and crop yield: The constant size of farmland in 3rd World Farmer**

As demonstrated above, 3rd World Farmer does an excellent job of highlighting some of the external factors that can influence the amount of money farmers are able to make. However, the game fails to demonstrate the impacts land size can have on crop yields, as it does not allow for reduction or expansion of farmland. The following section will outline the pros and cons to a game that does not allow for a change in property size.

**The decrease in size of smallholder farms in SSA.** Currently in SSA, the size of most smallholder farms are gradually shrinking. The average size of a smallholder farm has decreased by 30-40% since the 1970’s. This decline is partially contributed to the fact that most potentially available farmland in Africa is concentrated in very few African countries. Therefore, most African countries are very land constrained (Jayne et al., 2014; Lambin et al., 2013). The increase in the rural population in SSA has encouraged farmers to continuously cultivate available plots of land. This continual farming is not usually problematic for farmers who are able to maintain and increase the quality of their soil. Farmers in SSA, however, generally cannot afford appropriate fertilizers and soil treatments to maintain soil quality and crop yields over time. Moreover, they often cannot afford to spend a year growing crops that improve soil quality, but cannot be sold or consumed (Jayne et al., 2014). Smallholder farmers are placed at a further disadvantage, as they often cannot benefit from new genetically altered plants that improve crop yields. The depleted quality of their soil cannot support these new types of crops and often to not respond to the required fertilizer (Jayne et al., 2014; Giller et al., 2006; Tittonell et al., 2007).
This demonstrates one of TWF’s major weaknesses; there is no consideration of sustainable farming practices or the lasting impacts it can have. A player never loses a portion of crop yields or fertile lands over time due to unsustainable farming practices. Droughts or diseases will only ruin crop yield for a single year, and a family is always left with the same amount of fertile farmland. Furthermore, the simulation does not require application of fertilizer or other soil protectants in order to maintain crop yields. In this way, the game ignores one of the major complications that arises for many smallholder farmers in SSA; they are losing land and possible yields as they cannot afford to maintain their soils. This would be a fairly easy component to add to the game, as it would require a pop up window letting users know that soil treatment was recommended. Those who could not afford it would receive reduced crop yields for the following years until they were able to afford it.

**Increase in medium-scale farms in SSA.** Another component linked to land size and crop yield is that TWF does not allow players to buy more land in order to increase the amount of crops they can grow. This limitation can be seen as both a strength and a weakness of the game. Firstly, it can be seen as a strength as there are only small amount of available farmland in SSA. In many regions it is unlikely that a farmer would easily be able to expand their family farm. However, the inability to buy more farmland does not allow a smallholder farmer to develop a medium-scale farm, which is defined by Jayne et al. (2014) as a farm of 5-100 ha, whose owners typically do not work the land themselves. Handelman (2013) classifies them as midsized landlords. This is a weakness of the game, as the number of medium-scale farms in SSA is increasing. In Ghana, this increase is in fact partially due to a significant number of smallholder farmers who were able to expand (Jayne et al., 2014).
The inability to develop medium-scale farms also highlights another shortcoming of *TWF*. The game does not permit players to hire workers of the farm. The inability to hire help throughout the simulation can become very problematic. If a family member becomes sick, crop yields decline as the family unit cannot contribute as much labour. In SSA, it may be essential to hire help if it can be afforded. Moreover, hired help should not be difficult to find in rural SSA. Due to the high population density in the area, as well as the small number of urban centers in the area, many people are looking for work in rural communities (Handelman, 2013). Therefore, if the simulation were to offer the option of hiring help, it would not contradict the reality that many people in the region are jobless, or the fact that the number of midsized farms is on the rise.

Another related aspect, which is not well demonstrated in *TWF*, is that the simulation does not give the option for farmers to sell their land and become landless peasants. Currently in lesser developed countries, farmland is owned by fewer and fewer people. This indicates that small holder farmers are selling their lands to larger farming enterprises as well as to midsized landlords (Handelman, 2013). Although landless peasants occupy a lower social standing than smallholder farmers, selling land may be a necessary trade-off for struggling land owning peasants who can no longer afford their own land.

**Family health and family planning: The impacts of illness and fertility rates in SSA**

*TWF* demonstrates many important trade-offs and difficult decisions that may face rural families. For example, when families in the game are low on funds, they are often given the opportunity to store toxic goods on their lands for money, which usually results in the death of a family member. Moreover, families are often given the chance to host a military training center, something which also puts their families into danger. These trade-offs demonstrate that when a
family is desperate, they must make dangerous decisions in order to survive. The simulation also highlights the reality that poor farmers who cannot afford a lawyer, insurance, or who live in areas with little infrastructure are more vulnerable to these external factors. A sick family member will cost more money to take care of if there are no medical centers nearby, for example. Moreover, if there are no schools nearby, education will be more expensive, and children will not be able to contribute a significant amount of labour to the family farm. However, *TWF* creates an unrealistic picture of rural family life in many respects. Some examples of the simulation’s weaknesses in its portrayal of family life will be demonstrated in the following sections.

**Health: The example of HIV/AIDS.** Today, poor health is often considered to be a primary obstacle to development in the Third World. Since 1993, the World Bank has encouraged an investment in health to be an investment in development. Due to this idea, the eradication of AIDS has become a top priority for providers of foreign investment and aid. Moreover, the link between the illness and development has been largely explored by scholars (Martin-Brûlé, 2014). HIV/AIDS is a fairly common illness in SSA. Approximately 24.7 million people are living with AIDS in the region, while only a total of 35 million people are living with the disease worldwide. AIDS is particularly common in this region, as there is a lack of health infrastructure and education regarding the topic, as well as minimal access to condoms (Martin-Brûlé, 2014). This illness has a large impact on those who live with it, as well as on their family members. I will use the example of HIV/AIDS to demonstrate some of the strengths and weaknesses of *TWF* when it comes to demonstrating the impacts of illness.

*TWF* does a good job of demonstrating that those in poor health are unable to contribute to farm work to the same extent as they used to. In the simulation, as a family member’s health
decreases so does the total crop yield for the following year. This is the reality for many farmers in SSA. AIDS often leads to absenteeism from work and declining labour productivity which can lead to a decrease in salary (Martin-Brûlé, 2014). Moreover, for agricultural households, AIDS infection can lead to shifts in agricultural practices that can result in lower productivity, as well as a loss of economic resources due to labour shortage and expenditures on expensive drugs (Himmelgreen et al., 2009). This pressure on salary and productivity creates a necessity for children to work, in order to make up for this loss (Martin-Brûlé, 2014). In the simulation, children and the work they are able to contribute to the farm are almost necessary for the farm’s survival. In my experience, sending children to school, particularly in the beginning when the family has little money, will not allow for the farm’s survival. Their labour is needed to increase crop yield, as is seen in real farms in the SSA. However, the simulation does not take into account the fact that in reality, family members are usually expected to take care of the family member in need. In this way, the sick person’s working ability, as well as the ability for their family members to work will be decreased. As such, the full impacts of illness and the challenges it can create are not completely address by TWF.

Another unrealistic aspect of the game, particularly when comparing it to HIV/AIDS is that a family member may lose a large portion of health in one year of the simulation, but go back to normal (losing only a bit of health) in the following years. Moreover, the simulation offers the possibility to completely cure the family member from their illness, at a cost. In reality, AIDS is an example of an illness that cannot be fully cured. Although many more people have received access to treatment that minimizes the effects of the illness, those living in low-income countries, such as many found in SSA, have less access to these treatments. Furthermore,
treatments are often quite expensive. Without access to treatment, an infected person’s health is likely to continually worsen over the years (WHO, 2014).

HIV-AIDS is simply one example of an illness that demonstrates TWF’s inability to show the possible lasting and detrimental effects of illness. Much due to its impoverished state, people living in SSA, suffer from many other illnesses that could have been compared, such as malaria or tuberculosis (WHO, 2014).

**Fertility rates: Comparing SSA to TWF.** 3rd World Farmer begins with a farming family of four: a mother, a father, and their son and daughter. As the game continues, players have the option of having more children. This option comes at a price- when a woman is pregnant, her workload decreases substantially (from a 75% to a 38% workload, if the woman is completely healthy the time of her pregnancy). Moreover, when a new child is born, the total family workload decreases by 15% in the first year, and by 7% in the second. This decrease in workload lowers the crop yield during these years. The new child does not begin to contribute to the family earnings until he or she reaches the age of five. Moreover, an increase in family size also seems to have a slight impact on yearly family spending. This aspect of the game, generally demonstrates reality; family workload will decrease when there are newborns, and the family will have more expenditures. The less-realistic aspect of TWF is that players are completely in control of the amount of children they want to have- there are never any surprises.

There is much debate among scholars as to the amount of control women in SSA have over the numbers of children they have. Many cite the fact that women in these areas want fewer children than did past generations. However, their desires do not necessarily match the outcome, as some scholars have found that actual fertility rates surpass desired ones. This is largely due to the fact that access to contraception is very limited in SSA (Headley & Jayne, 2014). TWF,
however, allows players to have much control over the number of children the couple has. With a click of a button, a woman automatically becomes pregnant, and if the player does not wish to have any more children, this will not occur. It should be noted that the game has already created a scenario that does not allow the player to have complete control over the number of babies a couple can have. After a mother in the game has given birth to six children, she refuses to have any more children, a number which is similar to the average family size in the region. However, it would perhaps be more realistic if TWF could automatically generate pregnancy in certain cases, to demonstrate that women may not have complete control over the number of children they have. In this way, the game could also simulate a larger family structure similar to the average family in SSA, where the fertility rate in 2012 was 5.1 children per woman (World Bank, 2014).

**Lasting effects in 3rd World Farmer**

All of the examples demonstrated above demonstrate one of 3rd World Farmer’s biggest pitfalls; it is unable to demonstrate the lasting effects and unpredictability of small scale issues. The family in the game is almost able to begin with a blank slate every year. Their household can regain all of their health and their farmland is just as fertile as it was the year before, for example. Moreover, the game does not well demonstrate the fact that the people in the simulation are human beings. In reality, human beings have emotions, which can add an additional level of unpredictability. People do not always make the most economically favourable decisions. For example, one way of completing the game is to continually replace family members by sending sick ones away to the city. This allows the other spouse to remarry an individual with full health and work capacity, which increases crop yields. In SSA, people may not chose to replace their
sick spouses so easily, but may choose to spend money on expensive drugs in order to help them get well (Himmelgreen, 2009).

*3rd World Farmer* also continues ignore some of the more obvious unpredictable realities of life by allowing the game to end. The game is terminated once the player has invested in communication, schools, roads, a medical clinic, and has hired a representative that can provide him or her with crop insurance. In Sub Saharan Africa, however, civil war, conflict, or a continual shift in government could destroy these things or render them useless. Families may go back to the impoverished state they began in or could lose their property altogether. The game is never over.

**Conclusion**

*3rd World Farmer* is an excellent learning tool, as it demonstrates the reality of being a rural farmer in Africa in many ways. It demonstrates the volatility in external factors that can have a large impact on third world farmers. It additionally suggests that rural farmers can decrease poverty rates in the region, not only by providing food for the region, but also by investing in infrastructure and medical clinics, for example. However, *TWF* does not well demonstrate many of the realities of farm life in SSA. It does not allow for a change in farm size, which ignores the fact that smallholder farmers are losing and the fact that mid-sized farms are increasing in SSA. Moreover, its representation of family health is misleading. The game allows players to regain full health and does not account for the time other family members may have to spend taking care of them. Moreover, the game gives players too much control over pregnancy, and generally ignores the unpredictability that human beings bring about. *TWF* has many other similarities and differences with life in SSA that were not explored in this paper. Further research could compare the simulation’s representation of migration; one way of succeeding in the game...
is to send family members to the city. One could also explore the fact that many rural farmers in SSA have been encouraged to switch to alternative rural work, a possible trade-off which is not explored by the game. Finally, one could compare 3rd World Farmer with other rural developing regions in order to determine if the simulation is as applicable to other parts of the world.

References


doi:10.1016/j.foodpol.2014.05.014


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