

A Dynamic Model for Cash Waqf Management as One of The Alternative Instruments for The Poverty Alleviation in Indonesia

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Abstract

This research tries to offer a design of the cash waqf management system in a system dynamics model. The Cash Waqf Management is expected to become one of the alternative instruments for the poverty alleviation programs in Indonesia. These programs require huge amount of fund that cannot be provided thoroughly by the government. Therefore, initiation of new sources of fund for such a program is inevitable. In the Islamic socio-economic concept, there is a source of social fund that is economically and politically free of charge, namely cash waqf. In this concept, *Nadzir* (cash waqf fund manager) collects the fund from *Waqif* (cash waqf payer) and invest the money in the real sector and in any *syariah*-based investment opportunities. *Nadzir* will then allocate profits and returns gained from the investments to poverty alleviation programs. *Nadzir* is obliged to maintain the amount of fund in such a way that it does not go below the initial amount. Therefore, *Nadzir* not only should be highly capable, but also needs an experienced financial institution in helping SMEs development efforts. Using the system dynamics methodology, we try to design the structure of cash waqf system and simulate the behaviour of cash waqf model.

Keywords: *cash waqf, portfolio investment, poverty alleviation, system dynamics*

1. Preface

In the early 2005, the Indonesian poverty rate has been still discouraging. The poverty indices are still higher than those of the previous years. The economic crisis beginning in 1997, does not end until now. In addition, the Tsunami Disasters destroyed two provinces in Indonesia i.e Nanggroe Aceh Darussalam and North Sumatra in the end of the year 2004. Based on the Statistics Central Bureau (BPS)'s data, there are about 40 million Indonesian people who are under the poverty line.

Indonesia has come into debt trap made by the Indonesian government and the private sectors. Large amount of debt has weakened Indonesian economy for the past seven years. Currently, Indonesian foreign debt is approximately USD 130 billions, which consists of government foreign debt of USD 70 billions and private sector's foreign debt of USD 60 billions. In addition, domestic government debt has reached IDR 650 trillions level. Nevertheless, the amount of the debt has been increasing since Consultative Group on Indonesia (CGI) meeting in Bali (January 2003) decided to issue a USD 2.7 billion loan to Indonesia.

Meanwhile, the government has been confronted with the deficit budget almost every year since 1997, which means that the government may find it difficult to cover its routine expenditures. Those regular balance sheet items require so large amount of fund that government cannot provide adequate fund for other strategic needs, such as good education, appropriate health, poverty, and SME's development. Mismanagement of debts is the largest of all factors that make Indonesian go into crisis. Consequently, all of citizens and their offsprings have to carry the heavy burden of that debt.

2. Problem Identification

One of potential solutions to the necessity of sufficient fund for public needs is waqf fund from people's donation. People donate their money as cash waqf by purchasing cash waqf certificate. The gathered fund will be then invested in various investment portfolio and the profit of which can be spent for the above mentioned public necessities. The gained profit will also be used for funding poverty alleviation programs, while the principal of funds will be reinvested in various highly profitable investment opportunities.

Waqif donates his/her money as waqf fund to *Mauquf'alaih* (a person who is entitled to get benefit from waqf fund) through *Nadzir* (a person/an institution being in charge for managing waqf fund and distributing returns of waqf investment). Only gains of the invested waqf fund will be delivered to *Mauquf'alaih*. The principal of funds keep being invested in potential investment opportunities. In relation to its role as waqf fund investment manager, *Nadzir* on behalf of Waqf Institution may allocate some waqf funds to financial portfolio and finance SMEs' businesses on the basis of profit-loss sharing system.

The larger the investment returns, the more fund can be allocated to poverty alleviation program. In some countries, waqf fund management has

reduced poverty effectively and enhanced people's welfare, by providing additional fund for education & health development programs, cheap houses & public facilities development programs, and so forth.

3. Objectives of Research

This research is expected to be able to find out the potency of an Islamic innovation financial instrument, especially cash waqf, to alleviate the poverty in Indonesia. This research also tries to offer a design of the cash waqf management system in a system dynamics model. Using the system dynamics methodology, we tries to know the structure of cash waqf system and simulate the behaviour of cash waqf model.

On the next part of this paper, we will discuss definition, law, and history of cash waqf to recognize the concept and its potential benefit.

4. Problem Definition : Cash Waqf

Previously, waqf of building and land are the most popular forms of waqf. Nowadays, cash waqf has become increasingly well-known, particularly because of its flexibility, which allows distribution of the waqf's potential benefit to be benefited by the poor anywhere.

Cash waqf was firstly introduced in Ottoman era in Egypt. Professor Mannan then socialized cash waqf in Bangladesh through Social Investment Bank Limited (SIBL). SIBL issues Cash Waqf Certificate to collect funds from the rich and distributes gains of the managed funds to the poor.

Like those of Bangladesh, most of Indonesian people are poor. Characteristic of communities in both countries are also similar. Therefore, effectiveness of cash waqf certificate program to help reduce poverty in Bangladesh gives hope that analogous program can be successfully implemented in Indonesia.

Fatwa Commission, **Board of Indonesian Moslem Scholars**, responded the necessity of cash waqf certificate program in Indonesia by issuing the following *fatwa* (dated on 11 May 2002):

- a. Cash Waqaf (*Waqf al-Nuqud*) is waqf donated by individual, group of individuals, or legal entity, in cash.
- b. Cash waqf includes securities.
- c. Money donated as waqf is not forbidden (*jawaz*).
- d. Cash waqf can only be distributed and allocated for anything not against *syariah* (Islamic law).
- e. Existence of waqf fund should be conserved. Waqf fund cannot be transferred to anyone.

4.1. Cash Waqf Certificate Framework

Waqif is a person who donate some money as waqf by purchasing cash waqf certificate. The certificate can be bought in the name of family member, even

if he/she is already dead. *Waqif* expects return of the managed fund to be assigned for certain purpose, e.g. public facility development, poor people rehabilitation, etc.

Nadzir invests the collected fund in various investment portfolios. *Nadzir* may (1) invest the fund in *syariah* (non interest) banking products of both domestic and overseas banks, (2) finance selected businesses, (3) establish new prospective businesses, or (4) finance small and medium scale enterprises (SMEs). (see Figure 1)

4.2. Cash Waqf Certificate

According to Mannan (1998), the objectives of cash waqf certificate are;

- (1) to equip banks and other waqf management institutions with cash waqf certificate,
- (2) to help collect social savings through cash waqf certificate (cash waqf certification can be done in the name of other beloved family member to strengthen family integration among rich families),
- (3) to help transform the collected social savings to social capital, as well as to help develop social capital market,
- (4) to increase social investment,
- (5) to encourage rich communities' awareness on their responsibility for social development in their environment.,
- (6) to stimulate integration between social security and social welfare.

As cash waqf practice has not yet been popular in Indonesia, cash waqf management institutions in Indonesia can replicate successful practices from other countries, such as Bangladesh.

In addition to the above-mentioned objectives of cash waqf practice, profit of the managed waqf fund can be allocated for: (see figure 2)

1. Poor Family Rehabilitation.
 - Enhancing poor people's welfare
2. Educational and Cultural Development.
 - Supplying free books
 - Funding relevant research and development
 - Improving educational programs
 - Scholarship
 - Grant for schools
 - Preserving and developing cultural values
3. Health and Sanitation
 - Health and Sanitation for poor people
 - Establishing health center
 - Providing cheap medicines with appropriate quality
4. Social services
5. Building facilities for religious activity
6. Fixing social facilities.

Aspects involved when purchasing Cash Waqf Certificate include:

- One's own welfare (in this life and life after death)
- Family's welfare (in this life and life after death)
- Social welfare and social investment
- Developing social awareness: social security for poor people and social harmony for rich people.

Contribution of cash waqf to sosio-economic development in developing countries is significant. Fund collected through cash waqf certificate program can be allocated to social-related development areas (e.g., agriculture, education, health, and infrastructure), urban poverty alleviation program, and other public service development. This opportunity in turn will reduce poverty level and will allow people help themselves (Mannan,1998).

Cash waqf certificate will be issued in various denominations, e.g. IDR (Rupiah)-100-million, IDR-50-million, IDR-10-million, IDR-5-million, and IDR-1-million, in order that more prospective donors can afford them. Name of the donor (it can be on behalf of dead individual) and specific purpose of the donation (e.g. for educational services, health assistance, or other welfare enhancement efforts) will be stated on the certificate.

4.3. Requirements for Nadzir

Utomo (2001) states that cash waqf management institution is a legal entity, and therefore should fulfil some requirements, which are called *rukun waqf*. The rules can be explained as follows:

- a. *Al-waqif* is a person who donates waqf fund. He/she should be health physically and mentally. The decision to donate should not be made under pressure.
- b. Assets or fund donated as waqf are technically called *al-mawquf* in *fiqh* (Islamic law). Existence of *mawquf* should be clear and durable. Therefore, people can benefit from the waqf for long time.
- c. Those who are entitled to benefit from return of waqf fund management are *al-mawquf 'alaih*.
- d. The way of a *waqif* stating his/her asset or fund as waqf is called *sighah*.

Dr.Muhammad Anwar Ibrahim in his paper titled "*Wakaf Dalam Syariat Islam (Waqf in Islamic Law)*"¹ explains conditions that should be satisfied in managing cash waqf. They are as follows:

1. *Nadzir* is a person/entity that is assigned to manage waqf fund.

¹ This paper was presented in International Workshop on People's Economy Empowerment Through Productive Waqf Management, in Batam, 2002.

2. As a matter of fact, *waqif* has the right to determine person or institution that will manage his/her waqf fund. If a waqif does not appoint a *nadzir*, then *Kadi* (Islamic Judge) will do it for him/her. [Asy-Syarbini *op.cit* p. 396].
3. *Fiqh* experts determine flexible requirements for being a *Nadzir*. Fit and proper *nadzir* should be capable of managing waqf fund to be productive source of capital. If a *nadzir* cannot do his job properly, *Kadi* must replace him with someone else after explaining reasons for the replacement.
4. *Nadzir's* responsibilities include:
Maintaining waqf asset, preparing waqf asset for rent, managing waqf fund, collecting waqf investment returns and distributing them to *al-mawquf 'alaih*. *Fiqh* expert can expand these authorities as needed.
5. *Nadzir's* division of work. A *waqif* can appoint more than one *nadzir* to handle his/her waqf fund. If a *waqif* does so, each *nadzir* will conduct a more specific job. Asset maintenance, investment management, and investment return distribution will be carried out by different *nadzir*. If there are more than one *nadzir* for one job, a decision can only be made after necessary consultation among them.[Asy-Syarbini *op.cit*. hal 410-411].
6. Salary for *Nadzir*. *Waqif* may determine certain amount of money or percentage of waqf investment return as compensation for *nadzir*. A *nadzir* will not receive any compensation if he quits the job or gets fired. [*Ibid*].
7. A *Nadzir* cannot take any part of waqf fund.[*Ibid* hal 412].

As the appointed *nadzir*, fund manager may carry out the followings to sustain investment return of cash waqf fund:

1. Invest cash waqf fund in various domestic or global syariah portfolios with good prospect.
2. Invest cash waqf fund in real sectors or businesses whose sources, process, and outputs are in line with syariah. Fund can be invested in existing business or in newly initiated one. *Nadzir* may establish new businesses that provide public services, such as convenience stores, hypermarkets, basic food stores, universities, hospitals, etc. This will generate more job opportunities and appropriately satisfy some people's basic needs.
3. Allocate some of the collected fund as profit sharing-based loan to selected small businesses. Technical and managerial assistance are required to accompany this investment. If this investment runs well, *nadzir* will not only generate returns, but also help accelerate poor people's economic development.

Nadzir should also pay attention on some points described below:

- a. Transparency. *Nadzir* has to manage cash waqf fund transparently and regularly make financial and performance reports, which are accessible by waqif.
- b. Productivity. *Nadzir* has to be able to manage the fund productively, so that disadvantaged people can benefit from cash waqf fund continuously.
- c. Trustable. Integrity of a *nadzir* is crucial. It has to avoid any business opportunity and process that can lead to moral hazard. All proposed business activities should be assessed in terms of Islamic law.

4.4. Cash Waqf Management Institution's Duties and Responsibilities

Waqf Management Institution should manage waqf fund in such a way that the collected fund become more and more productive. The more the waqf investment return, the more *mawquf 'alaih* benefit from waqf fund. According to *fiqh, nadzir*, as a waqf fund manager, is obliged to handle the fund productively (Utomo, 2001). Furthermore, Manshur bin Yunus al-Bahuty states in *Syarh Muntaha al-Adaab* (p. 504-505) that *nadzir* is responsible for maintaining, expanding, and developing waqf assets in order that they can provide some income such as investment return, rent fee, agricultural products, etc.

4.5. Waqif's Requirements

Waqif has a right to settle on particular requirements related to his/her waqf. Such a requirement is classified in two groups, i.e. (1) requirement that goes in line with *syariah*, and (2) condition that does not align with *syariah*. *Nadzir* does not have to obey the latter, even if *waqif* has agreed to donate his fund as waqf. Any rule or requirement should not violate Islamic law. *Fiqh* experts affirm that power of *waqif's* requirement status should not contravene Allah the Almighty's rule.

5. Research Methodology

This research used system dynamics methodology to capture dynamic phenomenon of a system, in which variables change simultaneously as time moves. It also carried out a survey on possible implementation of cash waqf in Jakarta and Jawa Barat. The survey concluded that most people did not trust any existing government institution to manage cash waqf fund and control its investment activities, especially because cash waqf management will involve large amount of endowment funds. Most of them also recommend that if a special purpose institution is established to manage cash waqf fund, it has to be highly capable of detecting any potential dishonesty and assessing performance of cash waqf fund manager, i.e. *nadzir*. Therefore, it's necessary to design an instrument which is able to control the cash waqf management.

Based on the survey's result, using exclusively designed computer program then simulated some scenarios of cash waqf implementation to formulate some policy concepts applicable in Indonesia. The computer program was designed to help the policy makers (1) estimate cash waqf potential in alleviating poverty in Indonesia, (2) supervise performance of *nadzir* or waqf fund management institution, and (3) identify appropriate policies conducive to poverty alleviation programs.

Since there was no similar study preceding the research, some assumptions were applied. The ability of three national TV corporations (RCTI, SCTV, and

Indosiar) to collect donation amounting IDR 2 billions in two nights in 2000 and the other charity programs to collect donation in 2001-2005 were used as an assumption basis of amount of fund could be gathered by cash waqf management institution. This research also used data supplied by *Biro Pusat Statistik* Republik of Indonesia (National Beaurau for Statistics), *BKKBN* Republic of Indonesia (National Coordinating Agency for Family Planning) and *Islamic* Financial Institution.

5.1 Limitation of Research

This research put more emphasived on financial management expecially raising and investing of cash waqf funds. The duties of Nazir, as a cash waqf fund manager, are to increase the cash waqf funds and invest those funds in profitable portfolios. As we know, the poverty alleviation problems are complicated. However, they need multidiscipline knowledge to formulate and figure out the solutions. With this research we want to try to make an early design of poverty alleviation in the financial viewpoint using system dynamics modeling.

Figure 1.

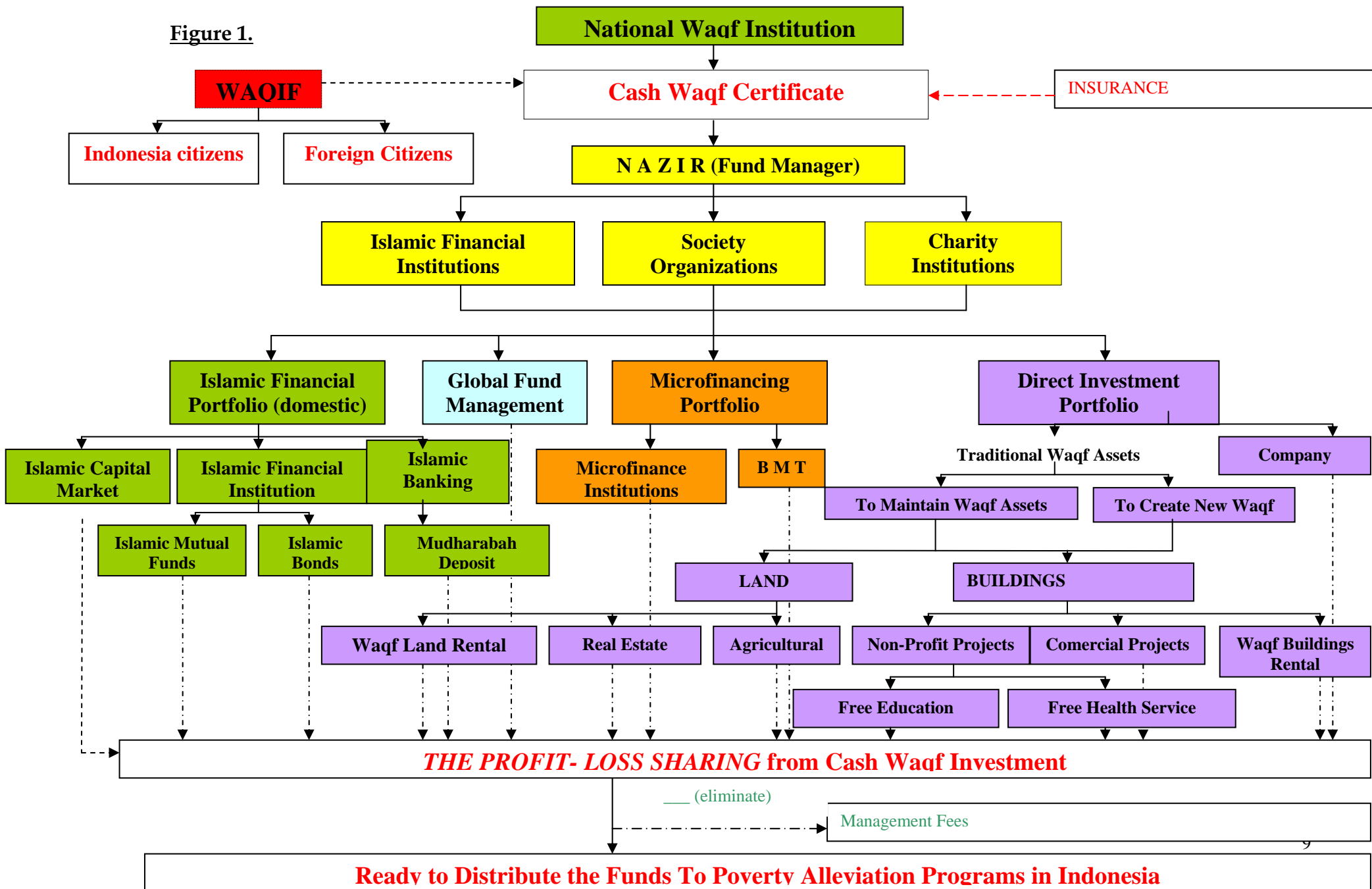
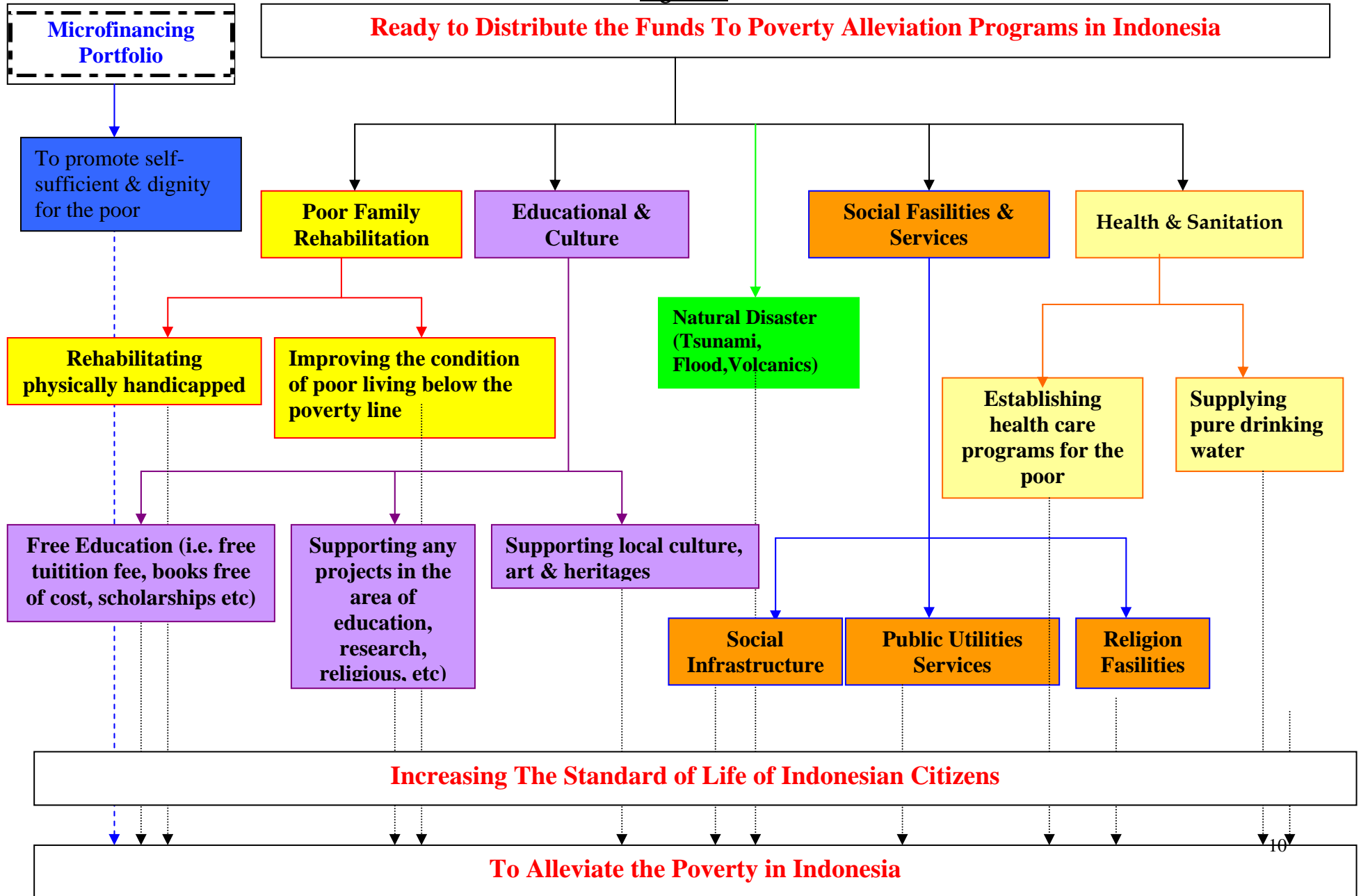


Figure 2.



6. General Description of System Conceptualization

The system conceptualization involves establishing model boundary, identifying causal relationships and policy framework². In this research the model boundary includes all relevant factors that are considered important in the problem context. The model comprises six interrelated components in the cash waqf management as shown as Figure 3.

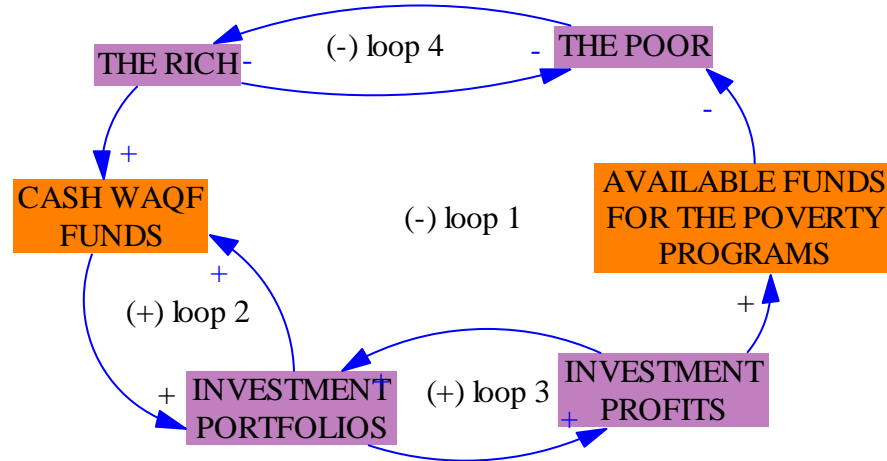


Figure 3. A Macro-view of Model

As depicted in the above causal loop, the model links among the rich, cash waqf fund, investment portfolios, investment profits, available funds for the poverty programs and the poor.

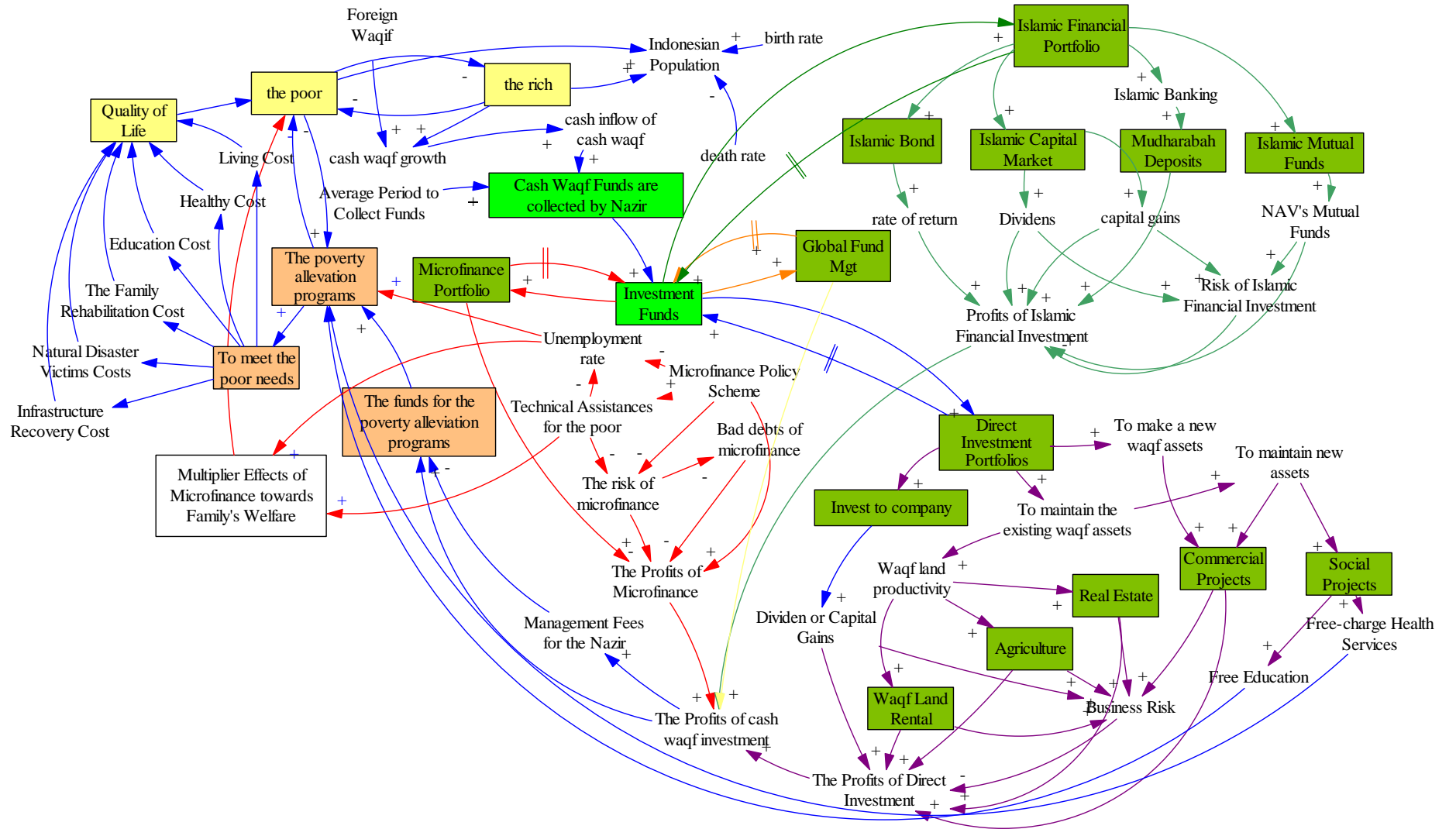
A general system of cash waqf model, derived from a macro-view of model above, consists of six sectors i.e:

- 1). The cash waqf fund raising sectors (the rich links to the collected-cash waqf funds),
 - 2) The Islamic financial portfolios sectors,
 - 3) The global fund management sectors,
 - 4) The direct investment in large and medium scale enterprises,
 - 5) The microfinance sectors.
- (number 2,3,4,5 are investment portfolios which link to investment profits)
- 6) The distribution sectors of the profits of cash waqf investment. (Investment profits link to the poor through the poverty programs).

The Interrelationship among variables can be seen in Figure 4.

² Sushil (1993), *System Dynamics "A Practical Approach for Managerial Problems"*, Wiley Eastern Limited.

Figure 4. The Interrelationship Among Variables in the General System



The interrelationship among the six sectors is described as following:

1) The cash waqf fund raising sectors

The responsibilities of this sector are collecting the cash waqf fund from the waqif and then distributing them to the investment portfolios. The profits of the investment will be distributed to the poor through the poverty alleviation programs. At which the profits will be distributed depend on the waqif requests such as the education, infrastructure, family rehabilitation, public health & sanitation.

In the cash waqf raising sectors, there are several causal relationship among the rich, who have the potency as a waqif, the gathered cash waqf fund, the invested funds to various portfolios, and the gained profits from investment which will be distributed to the poor. (see figure 5a and 5b).

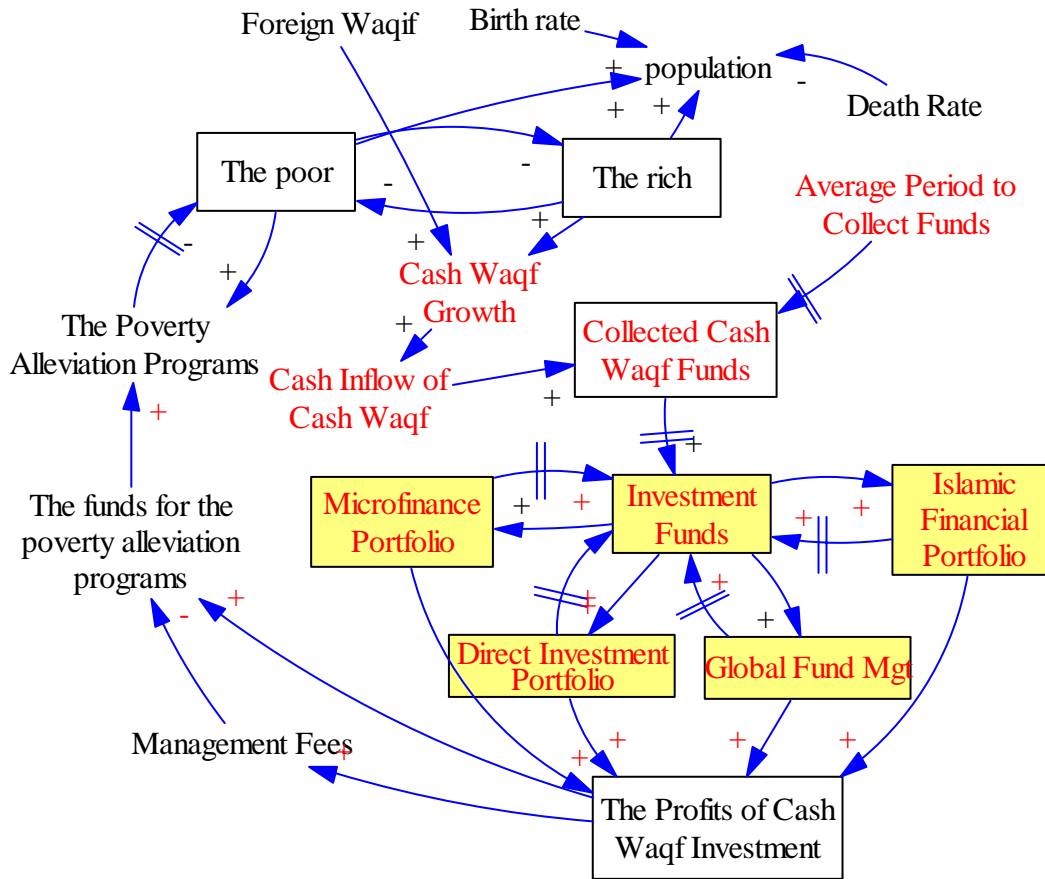


Figure 5a. Causal loop of The Cash Waqf Fund Raising

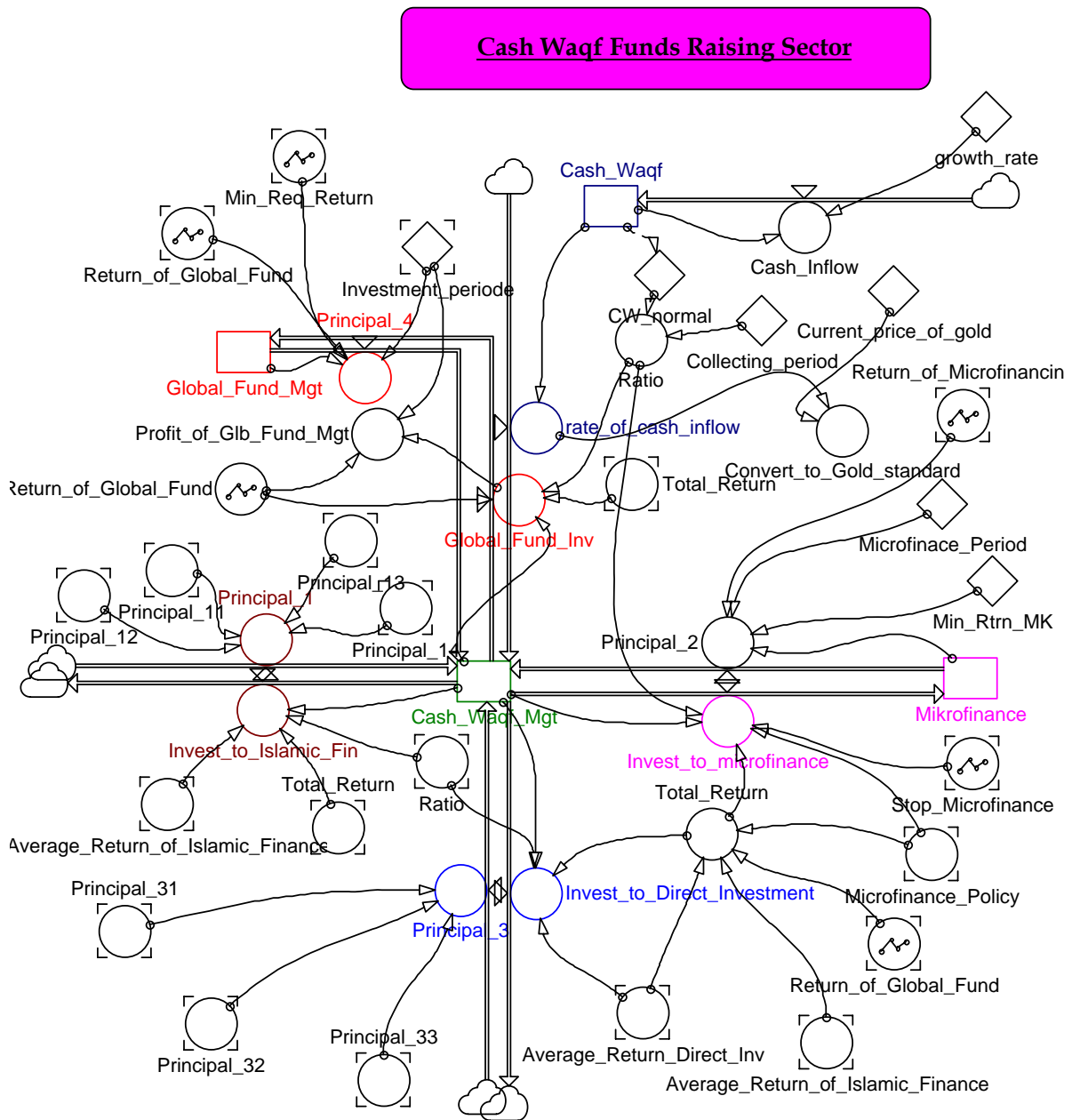


Figure 5b. Flow Diagram of The Cash Waqf Fund Raising

2) The Islamic financial portfolios sectors

The responsibilities of this sector are investing the cash waqf efficiently and effectively. The gathered cash waqf will be then invested by Nazir, a fund manager, in Islamic financial portfolios. The structure of Islamic banking and finance is firmly rooted in the Qur'an and the teachings of Muhammad which is called a Islamic Law³. Islamic Law has derived from revealed text a web of interrelated norms prohibiting interest-taking and undue speculative practices.

Generally, these portfolios are divided into four kinds i.e a). Islamic mutual funds, b). Islamic Capital Market Indices, c). Islamic Banking Products (Mudharaba Deposits), d) Islamic Bond. All of them are issued by Indonesian financial institutions.

The gained profits will be distributed to meet the poor's basic needs and increase the quality of the poor's life. Meanwhile, the principal keep being invested in potential investment opportunities. (see Figure 6a and 6b).

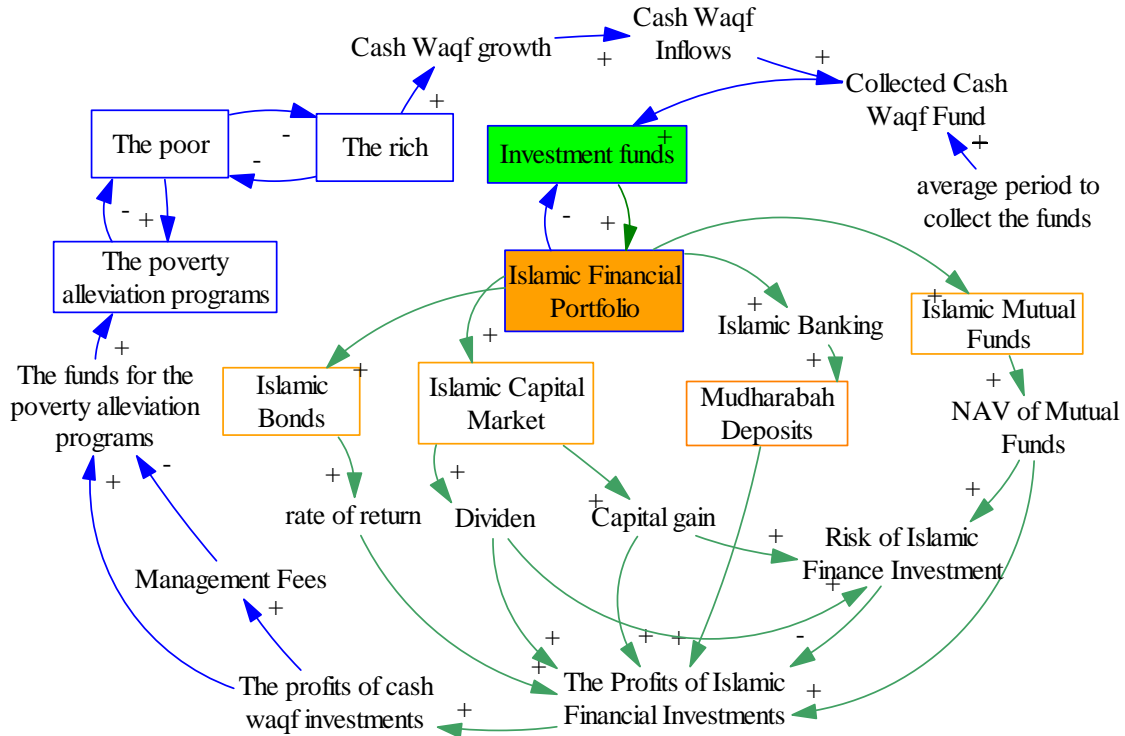


Figure 6a. Causal loop of The Islamic Financial Portfolios

³ Frank E. Vogel and Samuel L. Hayes III (1998), Islamic Law and Finance “religion, risk and return.” Published by Kluwer Law International.

Islamic Financial Portfolio Sector

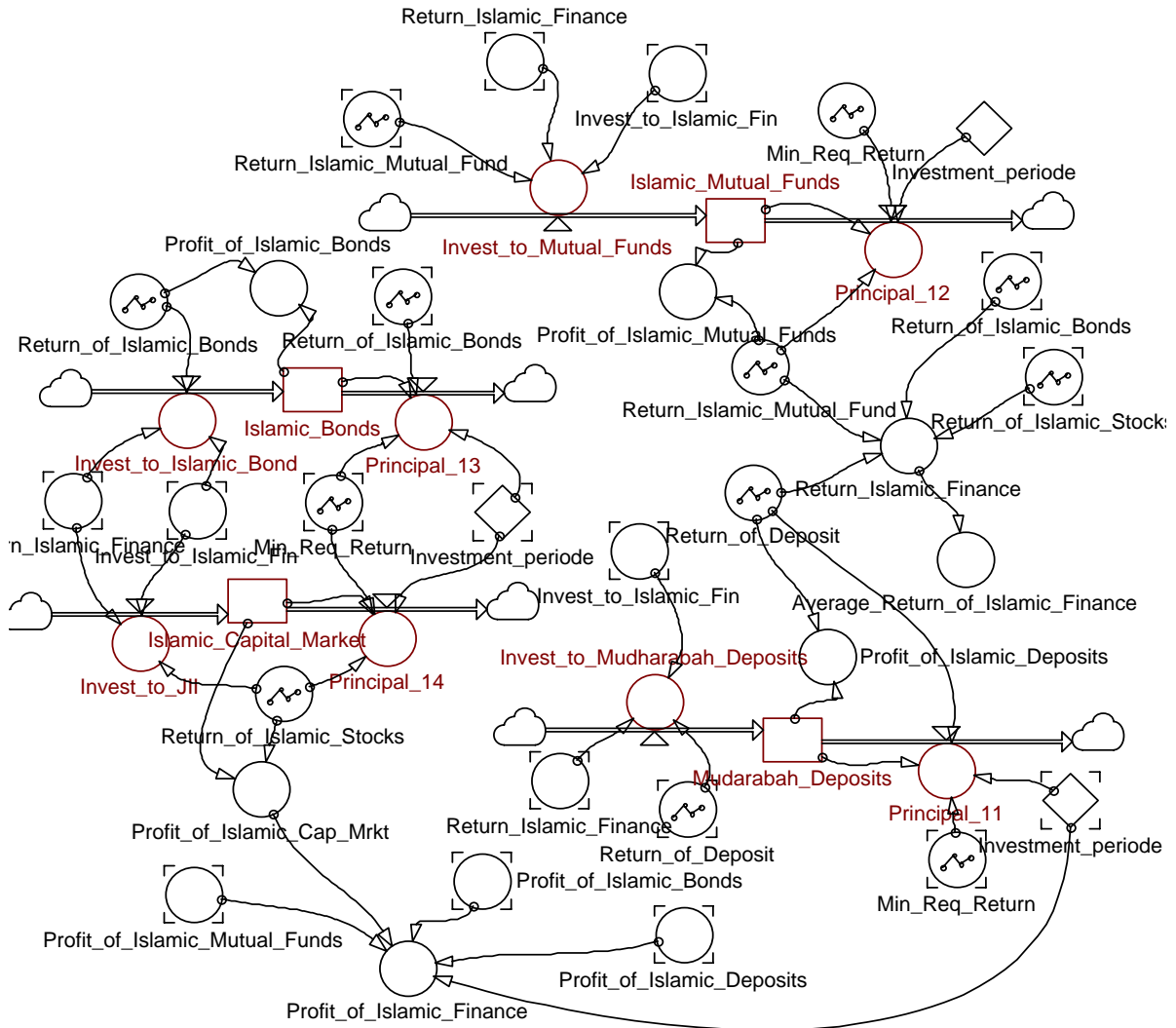


Figure 6b. Flow Diagram of of The Islamic Financial Portfolios

3) The global fund management sectors

The responsibilities of this sector are to invest the cash waqf fund in the global financial portfolios as known a global funds management such as Amanah Fund, Lariba Fund, Islamic Indices, etc. A fund manager should choose the portfolios not only high return but also safety. The better Nazir choose the investment portfolios, the higher profits will be gained and the more funds will be acquired by the poor.

The principal then will be reinvested in various highly profitably investment opportunities. (see Figure 7a and 7b)

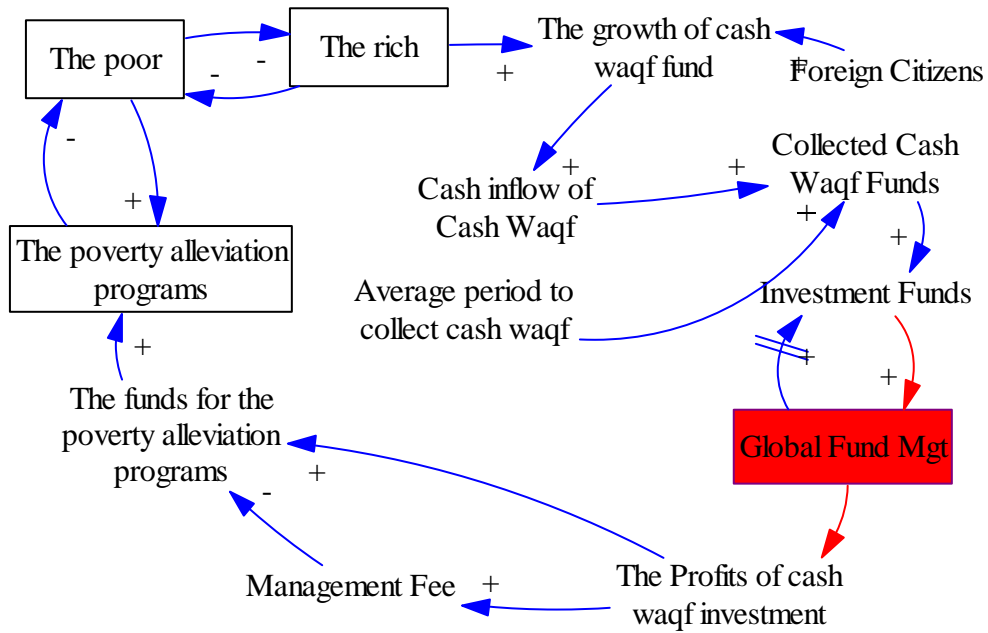


Figure 7a. Causal loop of the global fund management portfolios

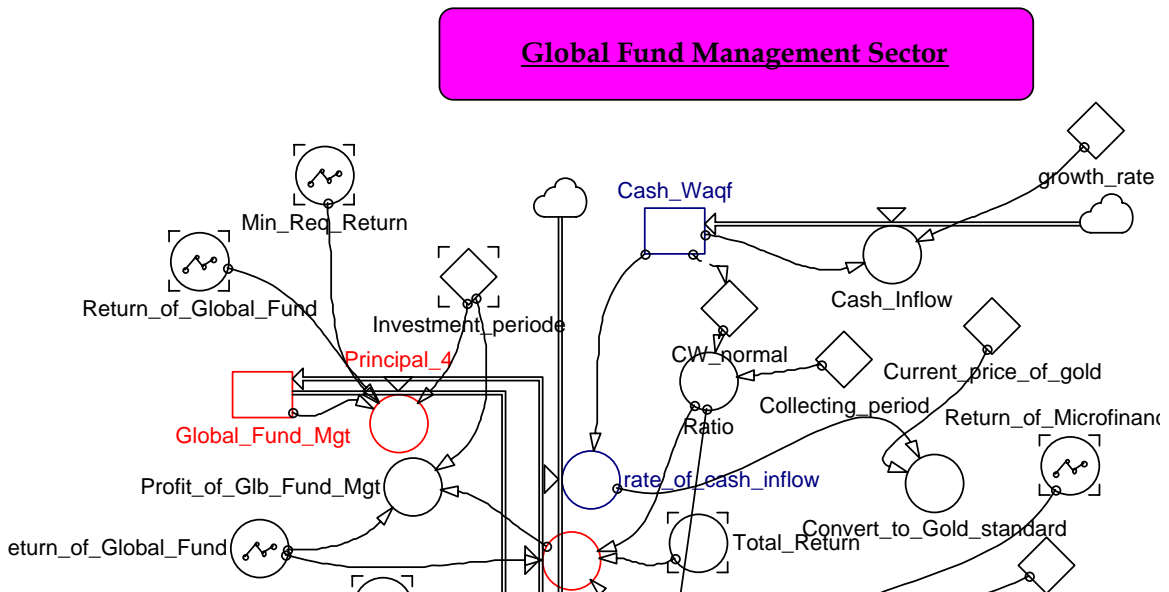


Figure 7b. Flow Diagram of The global fund management portfolios

4) The direct investment in large and medium scale enterprises

A cash waqf fund manager, Nazir, allocates the gathered funds to the big companies in the forms of stocks which the gained profit are dividends or capital gains. The nature of this sector is the long term. The other forms of direct investment are building the new waqf buildings and maintaining the existings waqf assets either for social projects or the commercial projects. (See Figure 8a and 8b.)

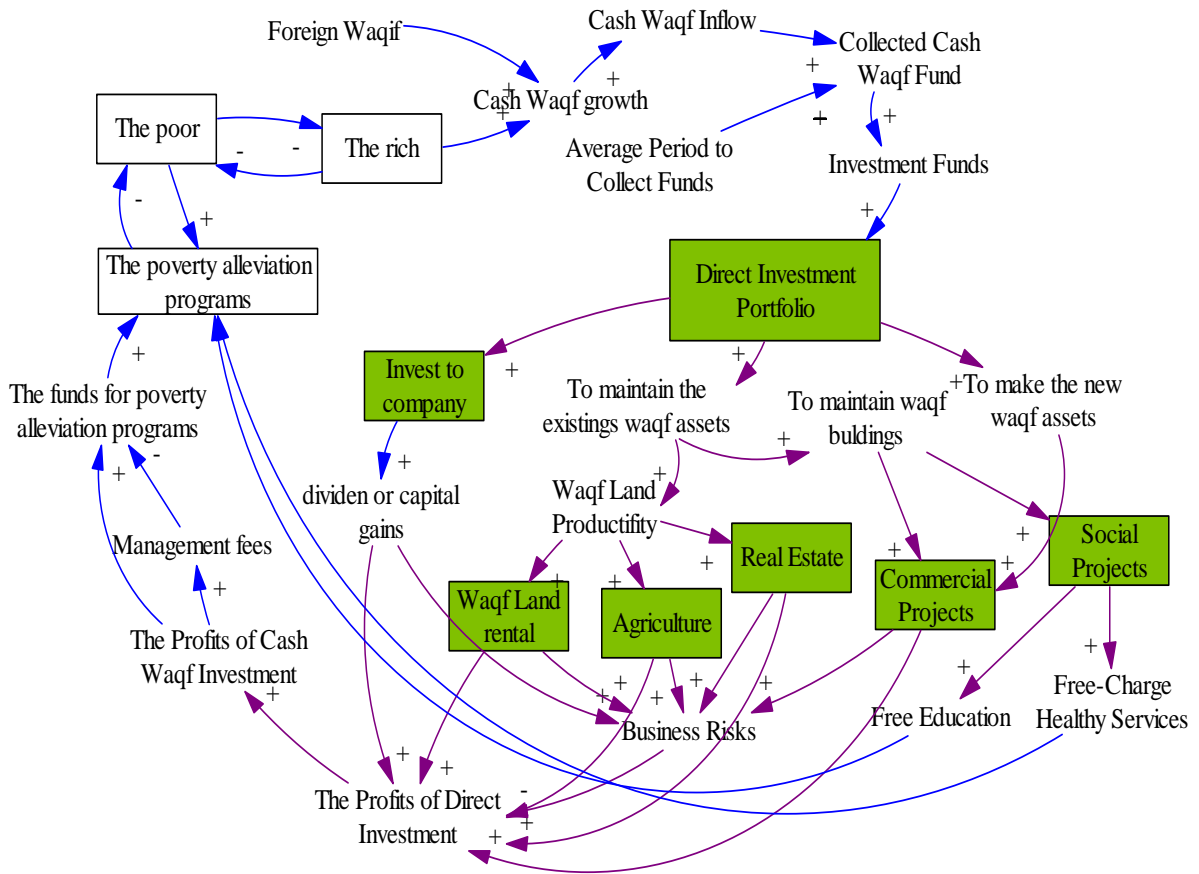


Figure 8a. Causal loop of the direct investment to real sectors

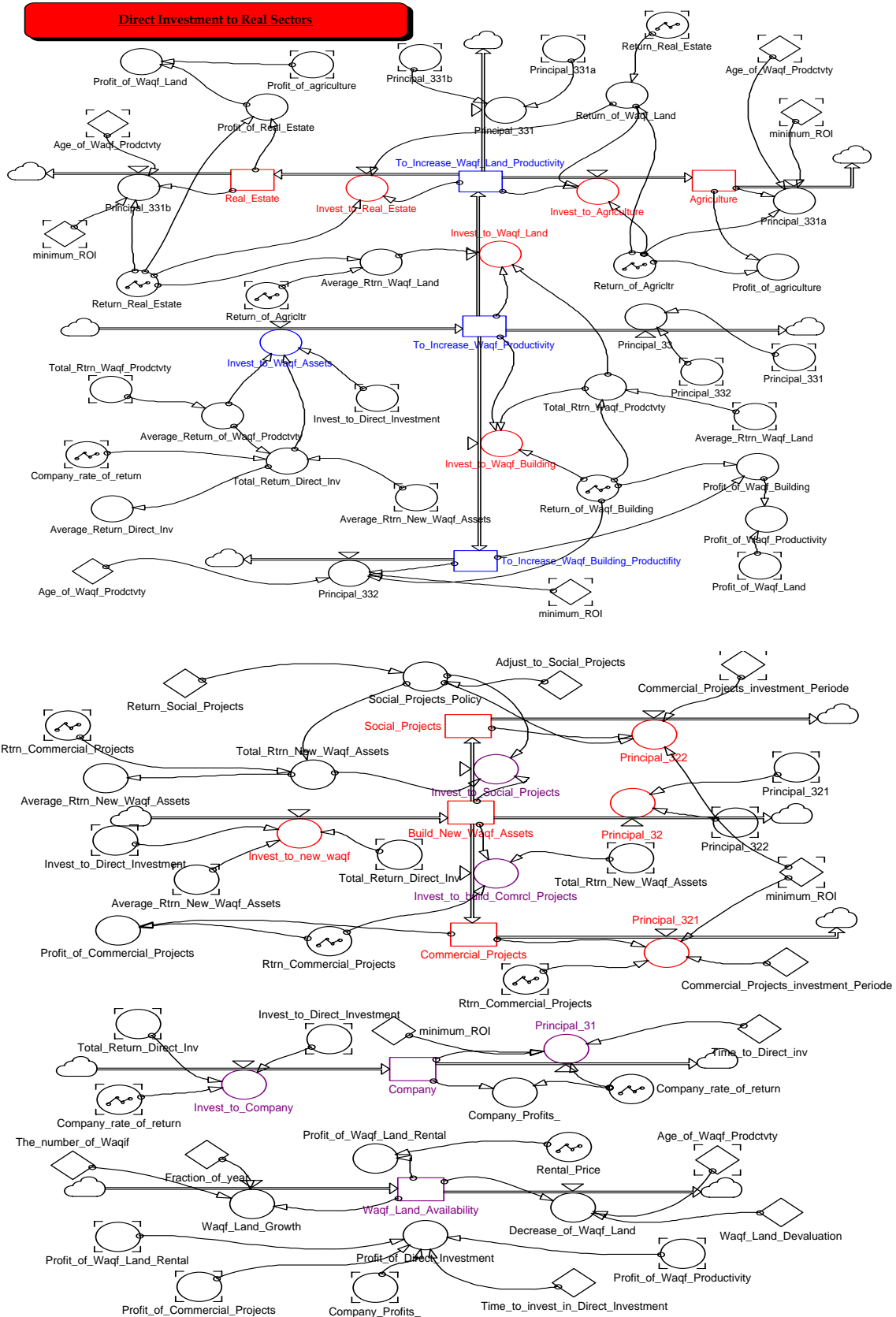


Figure 8b. Flow Diagram of the direct investment to real sectors

5) The Microfinance Sectors

The microfinancing programs, which used the loss-profit sharing, are one of the most important sectors for poverty alleviation. Most of funds collected through cash waqf certificate issues will be allocated as loan for microenterprises. This microcredit program should particularly be aimed at helping poor people initiate their business and enhance their quality of life, accordingly. Nevertheless, merely supplying them with capital is not sufficient, since most of them do not have adequate knowledge and skill to choose and to run a business that is suitable to their condition. Consequently, relevant business technical assistance is needed to help them survive.

Family's business activities have significantly influenced economy of a community, particularly in developing countries. Big manufacturing companies indeed dominate mass production processes, both for goods and services, but most of enterprises are initiated by family. In addition, family's consumption behaviour also affects production and marketing activities, as well as other business activities.

Government's programs for family business empowerment has to do with informal sector development efforts, as most of family businesses are operated in non formal format and business system. Family businesses, which absorb the largest number of employee, are also found mostly in small and medium scale. In most developing economies, these small and medium enterprises (SMEs) have limited access to formal financing practices, as well as to adequate government's technical assistance. (see figure 9a and 9b)

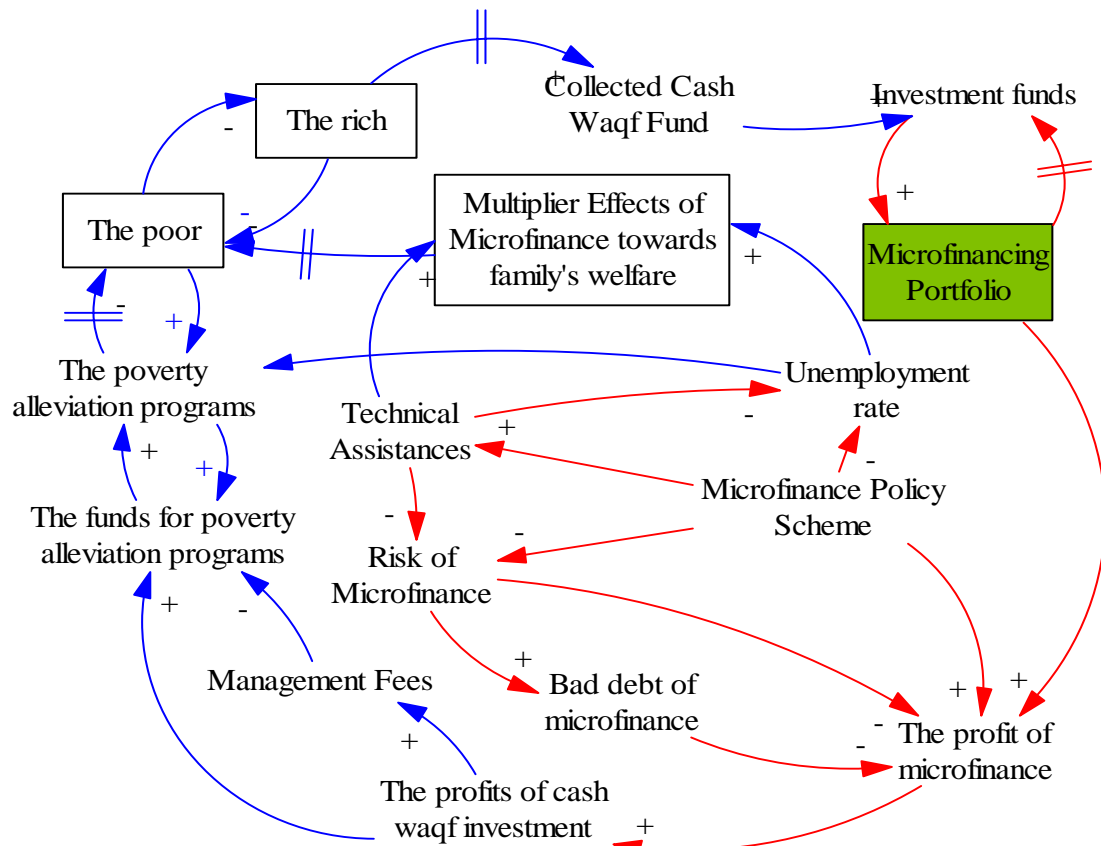


Figure 9a. Causal loop of The Microfinancing Sectors

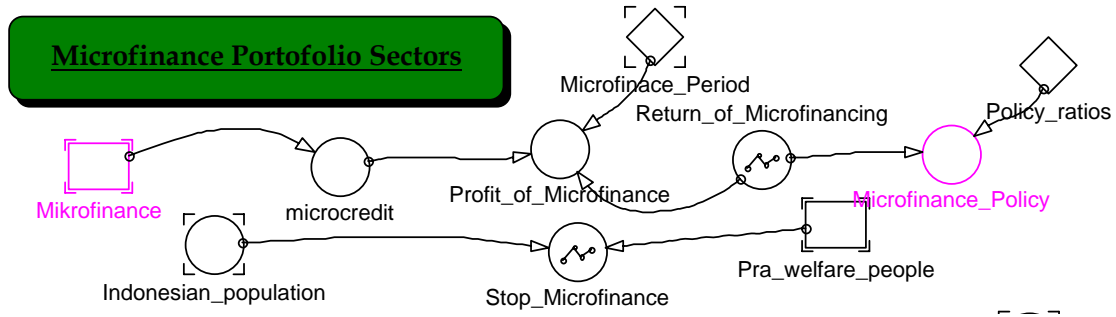


Figure 9b. Flow Diagram of The Microfinancing Sectors

6) The profits of cash waqf investment distribution sectors

The gained profits from the various portfolios will be distributed to the poor through the poverty alleviation programs such as basic needs, health services, sanitations, education, natural disasters victims, etc. The principal of cash waqf will be reinvented to various portfolio opportunities. (see figure 10a and 10b).

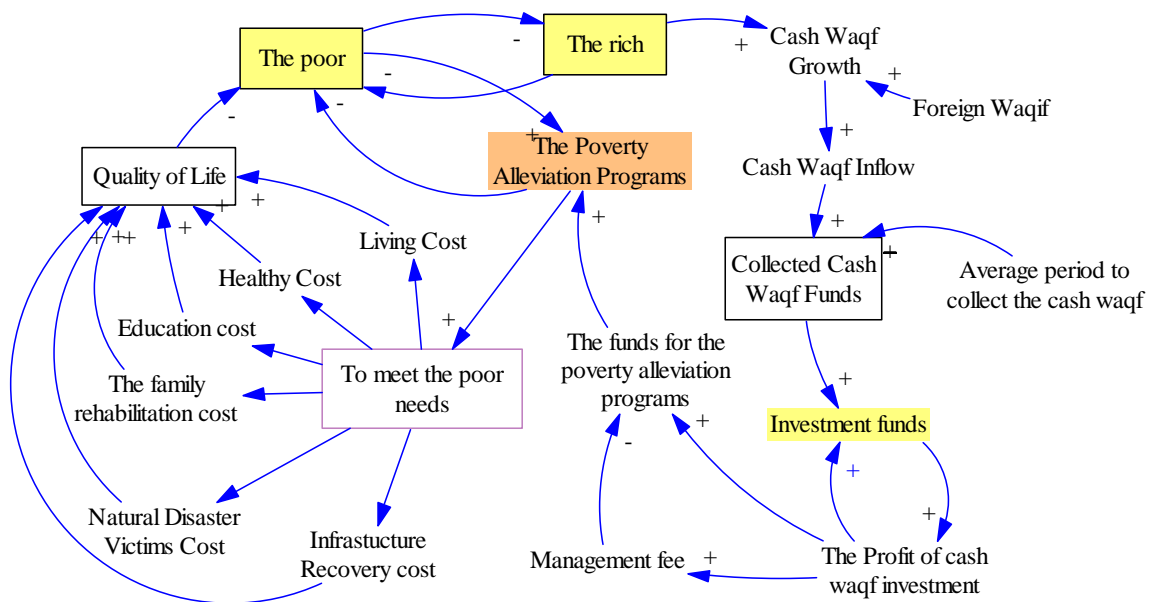


Figure 10a. Causal Loop of the cash waqf profits distribution sectors

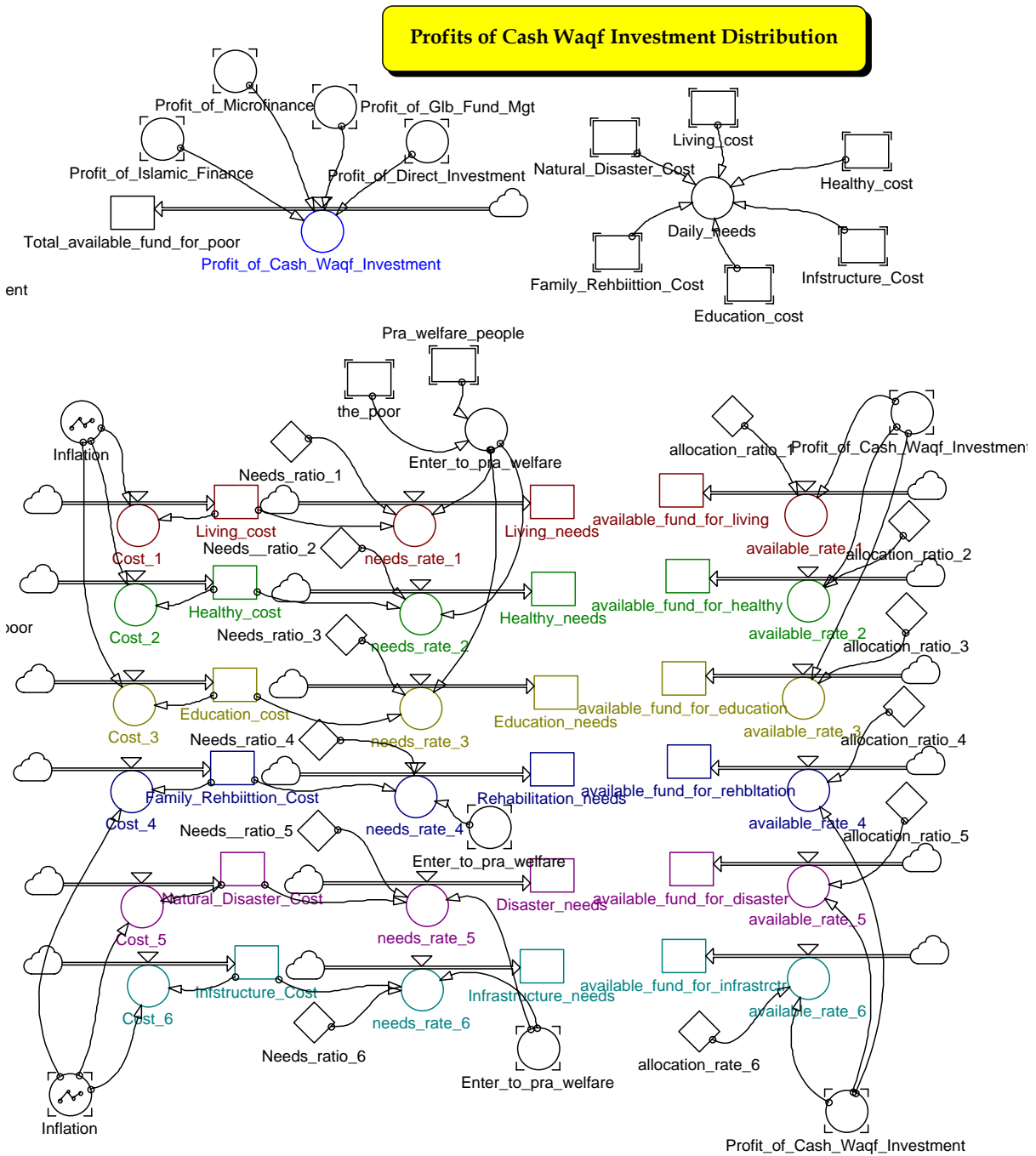


Figure 10b. Flow Diagram of the cash waqf profits distribution sectors

7. The Cash Waqf Management Control

The survey concluded that most people did not trust any existing government institutions to manage cash waqf fund and control cash waqf investment activities, especially because cash waqf management will involve large amount of endowment funds. Most of them also recommend that if a special purpose institution is established to manage cash waqf fund, it has to be highly capable of detecting any potential dishonesty and assessing performance of cash waqf fund manager, i.e. *nadzir*. Therefore, it's necessary to design an instrument which is able to control the cash waqf management. This model tries to design a control tools which is able to detect the human error in decision making either mismanagement or dishonesty quickly. (see figure 11.)

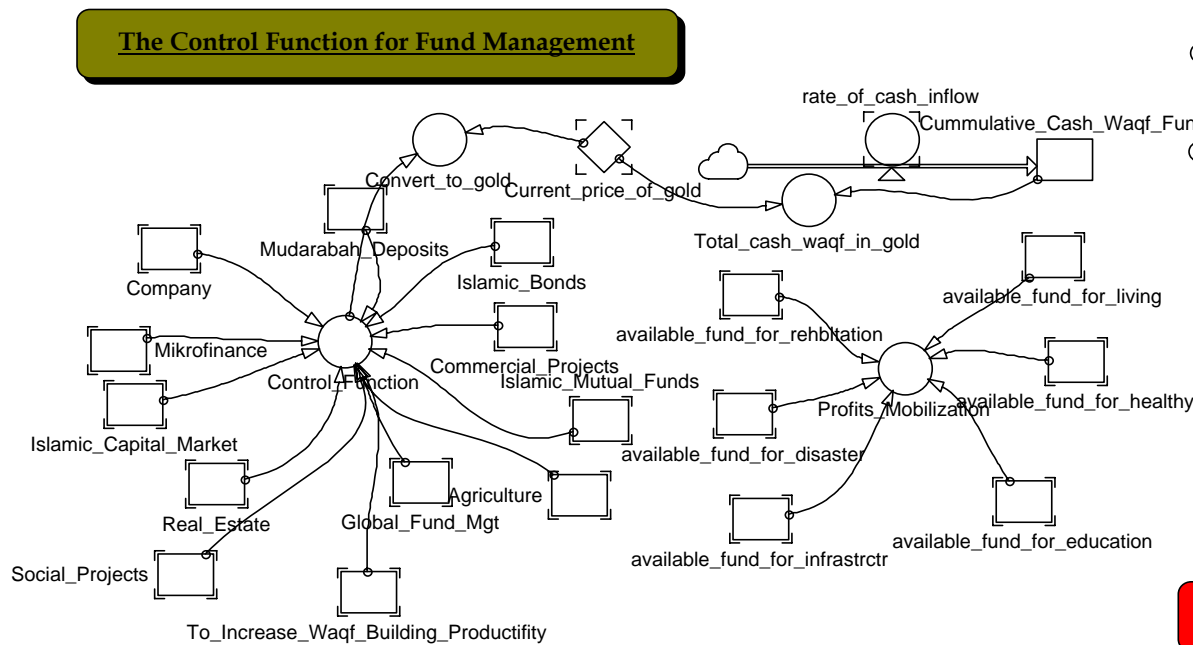


Figure. 11 Flow Diagram of The Control Function for Fund Management

The collected cash waqf fund from the waqif will be distributed to the various portfolios and then the usage will be controlled periodically. The early warning system will be prepared by the system in order to the amount of cash waqf fund will not go below the initial amount. It is the difference of the cash waqf from the other sources of funds. Gold standard can be used as the currency standard because of its stability. (see figure 11a-d).

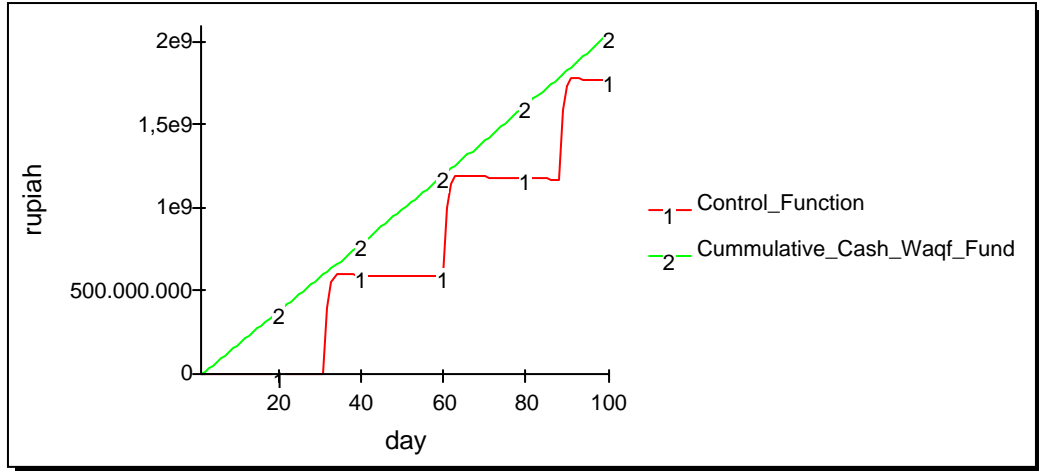


Figure 11a. The simulation result (short term)

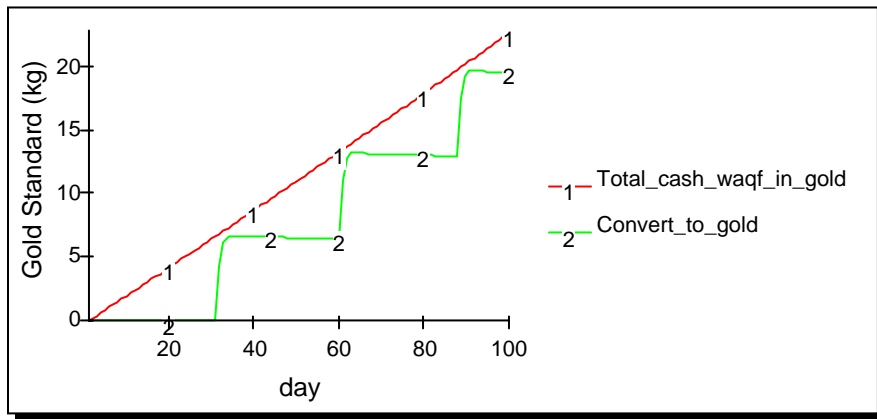


Figure 11b. The Simulation result (short term)

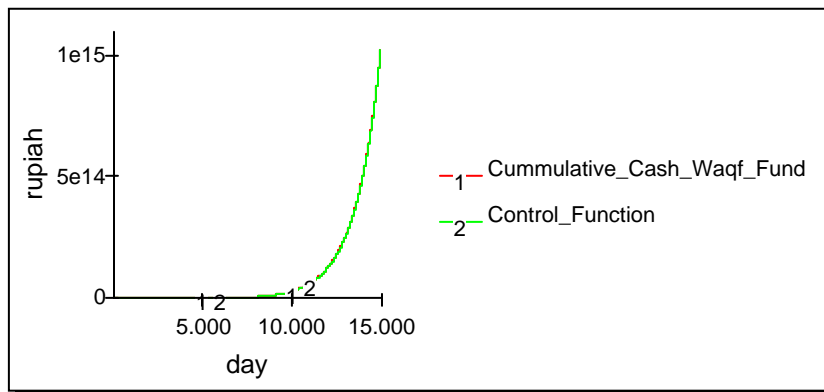


Figure 11c The Simulation Result (long term)

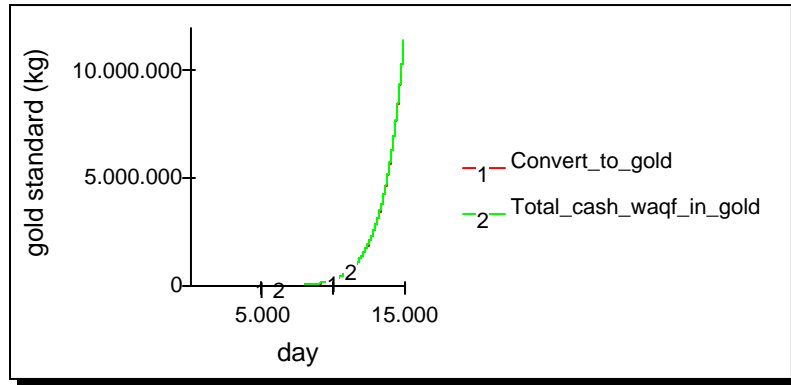


Figure 11d The Simulation Result (long term)

The waqif and public can control or monitor the cash flow of cash waqf investment. If mismanagement and dishonesty occurred, the simulation result could demonstrate the deviation. (see figure 11e-f)

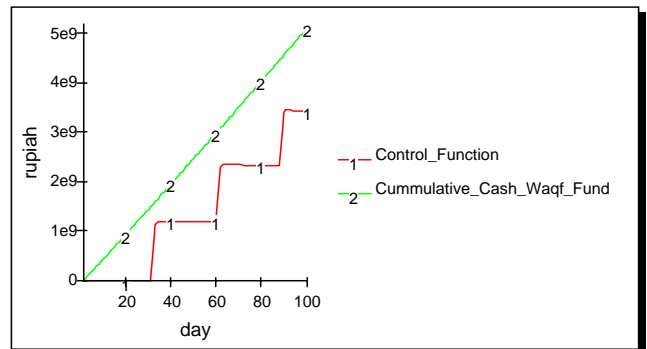
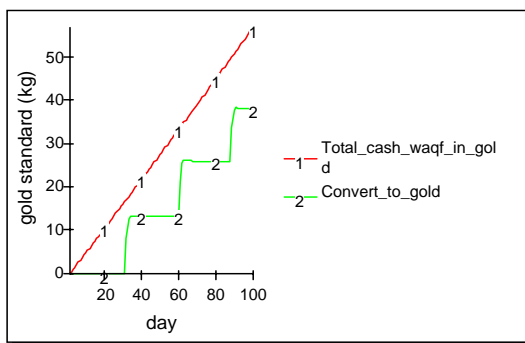


Figure 11e. The Simulation Result (short term)

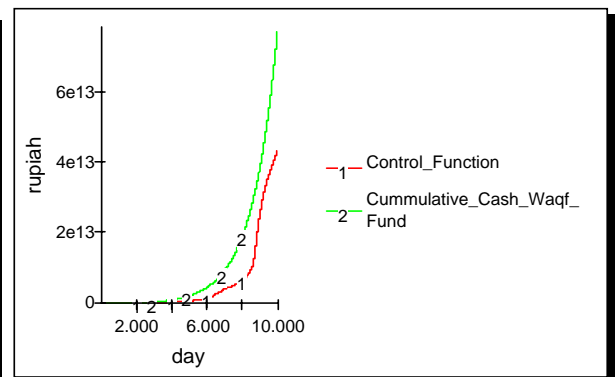
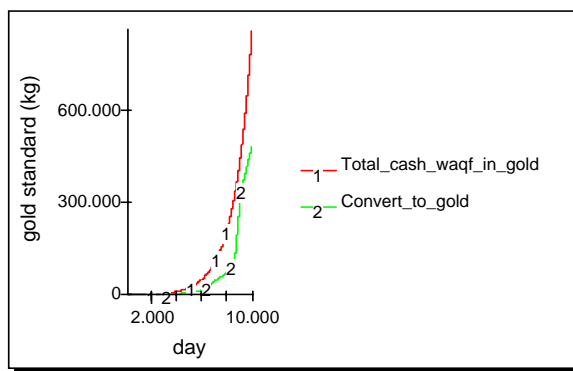


Figure 11f. The Simulation Result (long term)

annually and it would be invested in Islamic financial products with profit sharing- based various rate of return.(see figure 13).

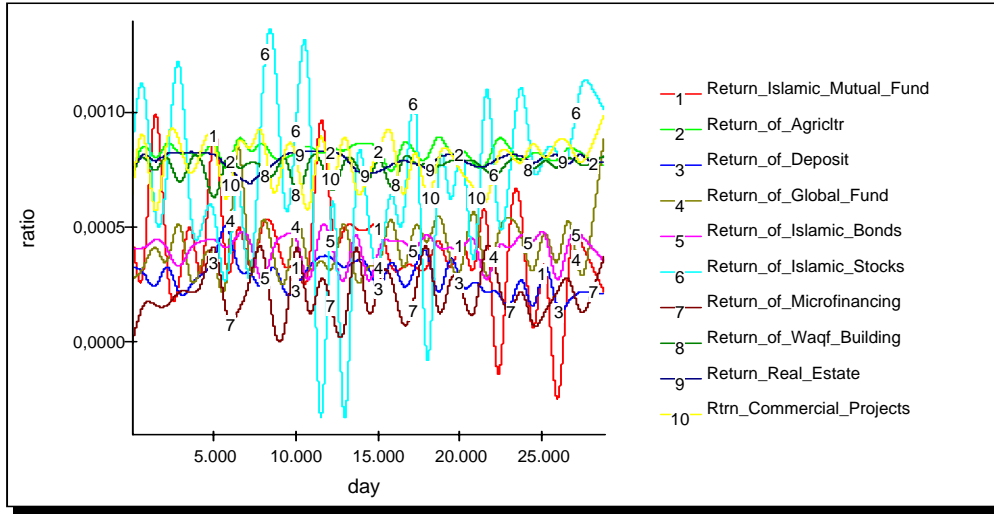


Figure 13. Rate of return of Cash Waqf Investment Portfolio

Using the above assumption and data supplied by Biro Pusat Statistik (*National Beaurau for Statistics*) , BKKBN (*National Coordinating Agency for Family Planning*) and syariah financial institution in Indonesia, the computer-based data process resulted in approximation of cash waqf investment return 25% annum. Such an amount of fund is expected to be available for the poverty alleviation efforts in Indonesia, especially through microfinance distribution program. If this plan can be implemented smoothly and if those assisted micro enterprises can get well run maximum of 8 years after being financed, it will take approximately 12500 days (35 years) to eliminate poverty and 22400 days (63 years) to increase quality of live for Indonesian population. (see figure 14a-b) Poor people, in this study, are those with very low quality of life. In other words, poor people are not only those who cannot feed once a day, but also those who cannot afford proper health and education services.

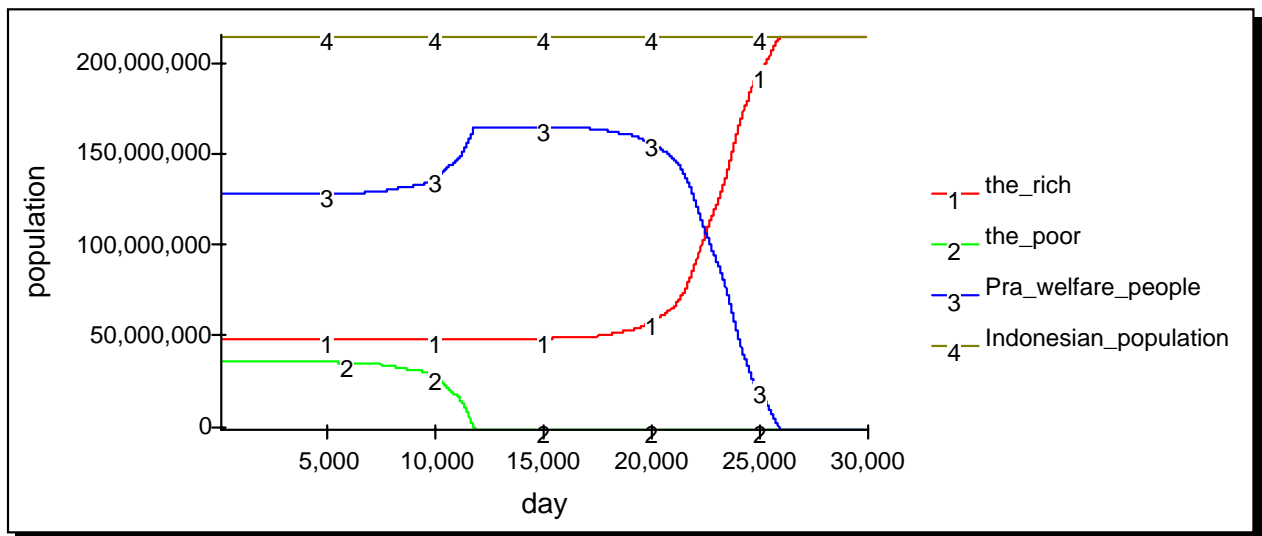


Figure 14a. The Simulation Result (based on IDR 20 million a day)

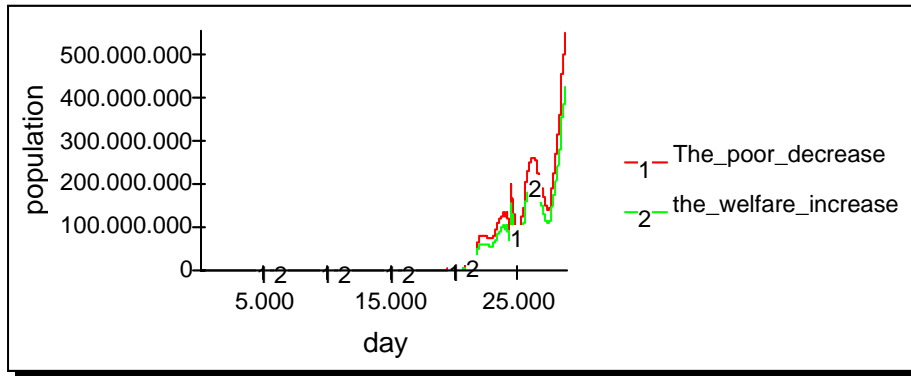


Figure 14b. The Simulation Result (based on IDR 20 million a day)

Based on the study result above and various scenarios proposed, if the gathered fund through cash waqf certificate increase i.e. IDR 50 million in a day , it will take approximately 11000 days (30 years) to eliminate poverty and 21000 days (57 years) to increase quality of live for Indonesian population with the assumption the others constant. (see figure 15a)

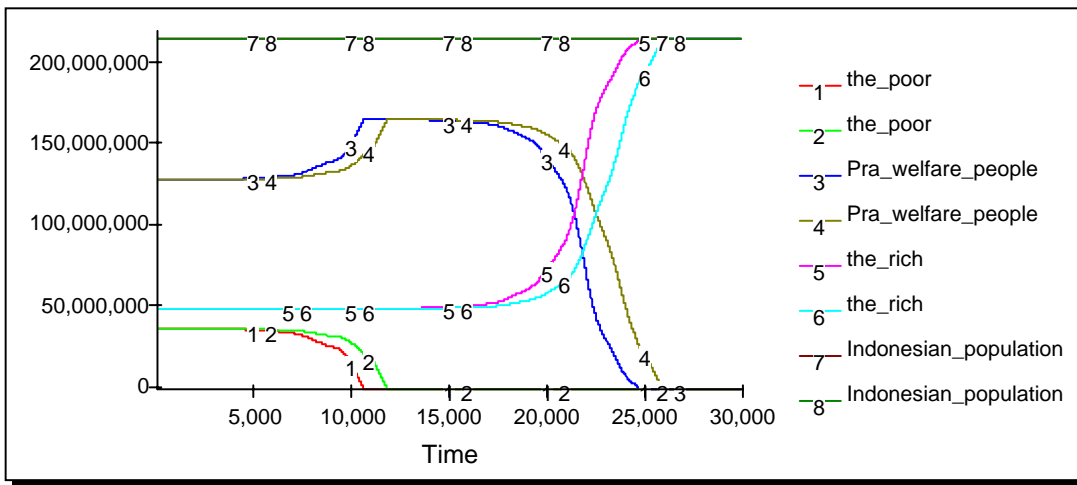


Figure 15a. Simulation Result (based on IDR 50 million in a day compare with IDR 20 million in a day)

List of References

1. Baswir, Revrisond, *Indonesian Foreign Debt*, satunet column, 2000.
2. Coyle, R.G., *Management System Dynamics*, John Wiley & Sons Ltd., Great Britain, 1997.
3. Frank E.Vogel and Samuel L.Hayes III (1998), *Islamic Law and Finance "religion, risk and return."* Published by Kluwer Law International
4. Ibrahim, M.Anwar, *Waqf in Islamic Law*, International Workshop on Productive Waqf Management, Batam, 2002.
5. LP3E, *Analysis on SMEs Development and Restructuring Policies*, Coordinating Ministry of Economy and LP3E Faculty of Economics, Unpad, Desember 2000.
6. Mannan, M.A.Abdul, *Cash Waqf, Enrichment of Family Heritage Generation to Generation*, Social Investment Bank Publication Series no. 1, 1st edition, 1998
7. Mannan, M.A.Abdul, *Cash Waqf Certificate- an Innovation in Islamic Financial Instrument: Global Opportunities for Developing Social Capital Market in the 21st Century Voluntary Sector Banking"*, Presentation at the Third Harvard University Forum on Islamic Finance, October 1, 1999
8. Mannan, M.A.Abdul, *Global Mobilization and Creation of Cash Waqf Fund for Human and Social Capital Infrastruktire for the Islamic Ummah*, Social Investment Bank Publication Series no. 5, 1999.
9. Mannan, M.A.Abdul, *Lesson of Experience of Social Investment Bank in Family Empowerment Micro-credit for Poverty Allevation: A Paradigm shift in Micro-financ"*, Social Investment Bank Publication Series no. 10, 1999.
10. Masyita, Dian, *Preliminary Implementation Model Design of Cash Waqf Certificate as Alternative Instrument for Poverty Alleviation in Indonesia using System Dynamics Methodologi*, Thesis, ITB, 2002
11. Sushil, *System Dynamics- A Practical Approach for Managerial Problems*, Wiley Eastern Limited, India, 1993
12. *System Dynamics Review*, *The Journal of the System Dynamics Society*, vol. 16 No. 1, Spring 2000, Wiley InterScience.
13. Tasrif, Muhammad, *System Thinking & Dynamics Modeling*, 1996
14. Utomo, Setiawan Budi, *Fiqh on Waqf and Cash Waqf*, Presentation in Monthly Discussion for Cash Waqf Implementation in Indonesia, MUI Commission of Economy, 2001.