

End of AY 2017 Report for SIP – Group 5

Project Title

ID: SIP17-05, Title: Disease Control for Neglected Infectious Diseases

Team

GSDM ID	Name	School	Department	Year (e.g. D1)	Leader/member
14213	Yuki Usui	Frontier Sciences	Computational Biology and Medical Science	D2	Leader
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(Not GSDM student)	Hiroataka Fujibayashi	Frontier Sciences	Department of International Studies	M2	Member

Objective: Explain what social/global issues that this project tried to address and why the issue is important.

OBJECT: Japan strategy for neglected infectious diseases

Neglected tropical diseases (NTDs) are infectious diseases that have not been primary target for R&D worldwide due to the market is not large enough to generate sufficient revenue and profit [1]. WHO identified 18 infectious diseases as NTDs to change this state of affairs. Government of Japan also started to promote R&D against NTDs. However, there was no method to prioritize the NTDs should be targeted from the epidemiological and science technological point of views. It is important to prioritize NTDs in order to proceed the R&D efficiently with limited fund. **Therefore, we conducted a comparative analysis of 18 NTDs from various perspectives to decide which disease(s) Japan should focus on.**

[1] Hotez, P. J., *et al.*, (2007). Control of neglected tropical diseases. *New England Journal of Medicine*

Method: Explain through what kind of approaches you tried to achieve the objective.

*About the list and details of the interview, add the appendix.

We first conducted the scoring analysis and discussed which criteria should be prioritized for the government of Japan (***Figure 1**). As a result, five items was set for comparison each NTD.

1.[Population size at risk of infection from NTDs]:

The number of people at risk of infection by each NTD is obtained and compared. We will consider pathogenicity of each disease (lethal or not, curable or not, transmissible via human or not).

2.[Biological characteristics of each pathogen]:

18 NTDs includes Chagas disease, Dengue, Chikungunya, Human African trypanosomiasis and so on. These are largely divided into three pathogens (viruses, bacteria, parasites) and there is a detailed classification of pathogens. The drug development approach is different depending on pathogen characteristics. We will also classify 18 NTDs by drug development approach.

3.[Research progress level of each NTD in the world]:

Research progress is evaluated by searching the number of scientific publications. Successively, We shall assess the drug development progress of each NTD (****Figure 2**).

4.[Regions of prevalence of each NTD]:

18 NTDs were classified by infected region area.

5.[Strengths and weaknesses of Japan's scientific community]:

We will survey strengths and weaknesses of Japan's scientific community. For example, Japan has historically been leading in parasitology. Prof. Satoshi Omura was awarded the Nobel Prize in physiology and medicine by the development of the drug "Ivermectin" against the tropical parasites. But on the other hand, Japan has less BSL-3, 4 facilities than other developed countries.

Outcome: Explain what kind of results you obtained from this project and discuss how it addressed your focal social/global issues.

During the SIP activities, we obtained practical skills and leadership that are necessary to solve global issues. We have done three major activities in the project as follows below.

1. Participation of discussions with experts in UN forum

We collaborated with the United Nations Forum and hold medial session on 7th, January 2017 at Tokyo University. We discussed with panelists from government, NGO and NPO and audiences as student discussants. We obtained clear reasons why government of Japanese should solve NTDs issues and change of global views against global health issues after the Ebola outbreak in West Africa.

2. Interviews to GHIT Fund

The Global Health Innovative Technology (GHIT) Fund is a unique funding organization to solve the global health issues including NTDs by collaborating with the government, private sector and civil sector. There were few collaborations opportunities with government and private sector, civil sector, and each organization tackled NTD issues independently. This fund was established in 2013 and they achieved to work global health issues by encouraging the R&D against NTDs. We interviewed with Dr. B.T. Slingsby, Mr.Sato (Vice President, External Affairs) in July 2017 (**Appendix 2**). We presented our NTD research to Dr. B.T. Slingsby, Mr.Sato, and find the weak points of our analysis methods. Moreover, we obtained two important views to tackle NTDs issues. One point of views is that NTDs issues is not only disease problem, because non only diseases was neglected but also infected people and people at risk of infection were neglected. Second point of view is R&D NTDs is long-term investments to developing counties, not just donation.

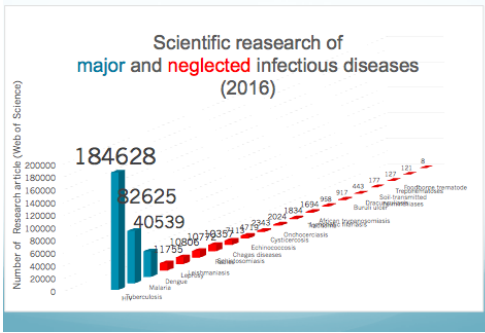
3. Holding a SIP

We hold a SIP on 22th November in 2017. In our SIP, we aimed to create a model for allocating the funding for Neglected Tropical Diseases (NTDs), including 18 diseases the World Health Organization (WHO) identified as primary targets for eradication (**Appendix 3**). After conducting researches and a series of interviews to experts including Dr. B.T. Slingsby, CEO of the Global Health Innovative Technology (GHIT) Fund, we presented the results of our project in an IEL. In the IEL, we explained our model and research result for each of 17 NTDs, obtained comments from professionals of the field, and exchanged opinions with the GSDM students and Faculty. After IEL, we obtained the technical points needs improvements and research skills of publish health fields.

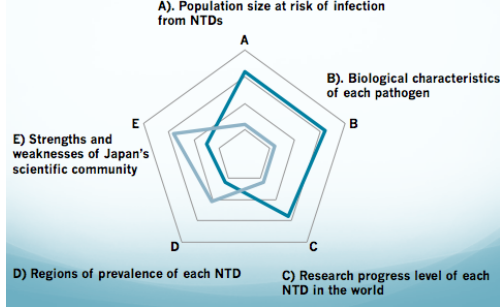
Budget: List the budget this project implemented. *About the details, add the appendix.

Purposes	Expense
IEL holding (inviting fee of 2 guest speakers)	13,700*2 = 27,400
Total	27,400

Current progress of research



Ongoing project: Assessment & Comparative analysis of 17 NTDs



(* Figure 1: Prioritization analysis)

(* Figure 2: Result of number of research papers of each NTD)

Appendix 1 :UN Forum, Medical sessions (17/01/07)

“Global Health Policy and Practice in Developing Countries: Challenges and Reforms—How the International Community Can Contribute to Improving Health in Developing Countries”



Appendix 2 :Interview with GHIT Fund (17/07)



(Left) Vice President, External Affairs **M. Sato**

(Center) CEO, **B.T. Slingsby**

(Right)SIP Leader, **Yuki Usui**

Photo taken by SIP **Mehtonen Teemu Johannes** At GHIT Fund Office (Tokyo)

Appendix 3: ILE (17/11/22) inviting with Prof. Toshiki Watanabe, Dr. B.T. Slingsby

