

5th Regional ABS Workshop for the Pacific

Reality in Bioprospecting Business,

Marine, Rainforest and Highland



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Items to be presented...

- ▶ GR, really wanted by industries?
- ▶ Who needs GR?
- ▶ How to reach demanding parties?
- ▶ What to lose, when GR transferred?
- ▶ Any way to keep GR in your country?
- ▶ Do you have a (well-considered & achievable) plan?
- ▶ Capacity building needs 3 elements...
- ▶ Reality in Marine, Rainforest, and Highland bioprospecting...
 - ▶ NGS's experience in Bhutan, Malaysia, and Myanmar etc..



Before starting... self introduction

- ▶ Nimura Genetic Solutions Co.,Ltd.
- ▶ Established in 2000
- ▶ Working with
 - ▶ Forest Research Institute Malaysia (FRIM) for 10 years
 - ▶ Sarawak Biodiversity Centre (SBC) for 8 years
 - ▶ Bhutan National Biodiversity Center (NBC) for 5 years
- ▶ Clients are
 - ▶ Mega-pharmaceutical companies
 - ▶ Cosmetic, Chemical, Supplement and seed companies



GR, really wanted by industries?

- ▶ Do you meet any business people really wants to access your Genetic Resources (GR)?
- ▶ If yes, do you engage any serious discussion with them?
- ▶ Do you know what industries are doing with GR?
- ▶ Do they really need new, foreign GR for their business?

??Mystery??

Who needs GR?

- ▶ Many academician needs GR for their research
- ▶ But for what?
- ▶ Academic world interacts with business world?
 - ▶ Ex) AstraZeneca collaborates with Griffith University
 - ▶ Good example, but facility is there...
- ▶ Pharmaceutical companies decline in bioprospecting drastically...
 - ▶ Pfizer, Merck, Eli lily, Takeda withdrawn from bioprospecting

How to reach demanding parties?

- ▶ First and the most thing is to know industries...
 - ▶ What they are doing
 - ▶ What they want
 - ▶ How they want to deal with GR owner government
 - ▶ Workshops, seminars, are important options,
 - ▶ Best you can do is to try working with industries!
 - ▶ Without National legislation on ABS, you still can work with them.

What to lose, when GR transferred?

- ▶ If you would transfer TK related GR, you should be very careful.
- ▶ However, in the case of microbes or other non-TK GR like marine animals, there should be no big risk.
- ▶ Even there is a risk, you can learn a lot out of it.

Any way to keep GR in your country?

- ▶ Nimura Principles

1. Carry out as much research as possible in GR owner country.
2. Technology transfer should be carried out in GR owner country.
3. GR owner country should be co-owner of IPR, if possible.

- ▶ Proper extraction of GR for screening is first target. (practical)

- ▶ To establish proper and reliable extraction facility to keep GR in your country is not too far goal.

Do you have a (well-considered & achievable) plan?

- ▶ You have to have your own achievable plan, short, middle and long term.
 - ▶ That is very much depending on your own decision.
- ▶ You have to have your own vision.
 - ▶ How would you like to be? Japan, Singapore, or Costa Rica...
 - ▶ I recommend...

Capacity building needs 3 elements...

1. Good regulation
 - a. Legal advise
 - b. Nagoya protocol compliance
2. Scientific facility
 - a. Basic facility
 - b. Technical know-how
3. Business experience
 - a. Industry information
 - b. ABS agreement drafting experience



Reality in Marine, Rainforest, and Highland bioprospecting...

NGS's experience in bioprospecting...

Marine...

- ▶ Working on microalgae with SBC and Mitsubishi corp. for 2 years
 - ▶ Target: marine and freshwater microalgae
 - ▶ Purpose: microalgae culture collection for various industries
 - ▶ Core industry: bio-fuel, supplement
 - ▶ Many strains collected, and characterized with some bioassays.
- ▶ Working on marine microbes with FRIM and some pharmas
 - ▶ Target: microbes living in mangrove forest
 - ▶ Purpose: small molecule compounds for pharma
 - ▶ About 2000 strains collected, and pharma paid for big amount for project, royalty went to collaborating institute.



Reality in Marine, Rainforest, and Highland bioprospecting...

NGS's experience in bioprospecting...

rainforest...

- ▶ Working on microbes with SBC, FRIM for 8years and 10years respectively
 - ▶ Target: microbes
 - ▶ Purpose: small molecule compounds for pharma, enzymes for chemical, etc.
 - ▶ Core industry: pharma, chemical
 - ▶ About 25,000 strains collected, and characterized with some bioassays. 4 patents. Some royalty went to both institutes.



Reality in Marine, Rainforest, and Highland bioprospecting...

NGS's experience in bioprospecting...

highland...

- ▶ Working on all GR with NBC in Bhutan
 - ▶ Target: all GR
 - ▶ Purpose: support establishing NBC's bioprospecting laboratory
 - ▶ About 500 medicinal plants collected, and some European cosmetics paid for US\$ a few thousand k for project.
 - ▶ GEF's Nagoya protocol Implementation Fund (NPIF) granted from 2014



Reality in Marine, Rainforest, and Highland bioprospecting...

NGS's Achievement....

Establishing bioprospecting laboratories.

- ▶ 2 NGS's labs. One is 4000sqf. For capacity of 30 researchers with most of microbial research and basic bioassays. Second is 6000 sqf. for capacity of 40 researchers with most of microbial research and plant related research.
- ▶ SBC microbial laboratory. With microbial research and DNA sequencing facility.
- ▶ NBC bioprospecting laboratory. 2000 sqf. with basic plant extraction facility and storage.



Reality in Marine, Rainforest, and Highland bioprospecting...

NGS's Achievement....

IPR

- ▶ 4 patents for antibiotics from soil microbes with FRIM.(WIPO)
- ▶ 4 patents for luminescent agents from star bugs with Olympus and Perak State Development Corporation.(WIPO)

ABS money contributions

- ▶ royalty sum > US\$500,000 to 3 different collaborating institutes.
- ▶ Total investment in Malaysia >US\$4,000,000 including employment.



Conclusion

You needs...

- ▶ Balanced 3 elements (regulation, scientific, business)
- ▶ Knowing users' demand
- ▶ Setting your goal, and achievable plan

- ▶ Understanding ABS well.

Thank you for your attention!

