

## **PROSPECTS FOR SCIENTIFIC ENGAGEMENT AND JAPAN'S POTENTIAL ROLE IN THE 2017-2020 NPT REVIEW CYCLE**

By Andreas Persbo, Executive Director

Jiji Press Building, Tokyo, Japan

Tuesday, 29 November 2016

### **Introduction**

1. Thank you, Dr Murakami. It is a great pleasure for me to attend this meeting today, and to present alongside yourself, Olli Heinonen, Corey Hinderstein, Ole Reistad and Mr Tomikawa.

### **Technological development in a changing context**

2. This year has seen many changes in national politics, and these changes will eventually have a foreign policy impact. It is hard to foresee what those impacts may be. However, there are still plenty of opportunities, in my mind, to use the upcoming Non-Proliferation Treaty review cycle as a catalyst for more work on disarmament.
3. About five weeks ago, the United Nation's First Committee adopted Resolution 57.<sup>1</sup> As you probably know, Japan co-sponsored this document alongside many other governments. This resolution will hopefully lay the foundation for a sustained international collaboration on verification. The document calls on all states 'to work together to identify and develop practical and effective disarmament verification measures.'
4. Some initiatives have already been established to this effect, and I refer specifically to the UK-Norway Initiative, which Ole Reistad and I helped to set up a decade ago, and the International Partnership for Nuclear Disarmament Verification, which Corey Hinderstein was instrumental in establishing.
5. Resolution 57 goes several steps further, however. It calls on Secretary-General-designate Guterres to seek member views on ways to develop 'practical and effective nuclear disarmament verification measures'. Mr Guterres has been asked to report back to the General Assembly on this next year.
6. After this report, the United Nations have been requested to 'establish a Group of Governmental Experts,' also known as a GGE. This group will be comprised of up to 25 participants. It will report back by the time of the 2020 NPT Review Conference.
7. A huge majority adopted this resolution, with 177 states in favour.

---

<sup>1</sup> See UN Document [A/C.1/71/L.57/Rev.1](http://www.un.org/News/Press/docs/2016/10/20161024_57.html), dated 24 October 2016.

### **The benefit of a GGE**

8. I believe that it is time not only to establish a GGE but to supplement it with a Group of Scientific Expert (a GSE).
9. The GSE concept is not without precedence. In the run-up to negotiations on a Comprehensive Nuclear Test Ban Treaty, there were scientific and political disagreements over the verifiability of the proposed treaty. To achieve at least partial progress on the issue, Sweden proposed the establishment of a new group to study the technical aspects of verification. This group, set up under the auspices of the Conference on Disarmament, became known as the 'Group of Scientific Experts'. It was active for 20 years, from 1976 to 1996.
10. The work of the CTBT Group of Scientific Experts cannot be understated. This group focused on solving real practical problems. They sought solutions, and found them, at a time when there was no political will to negotiate the test ban itself. I see no reason why a similar effort could not be made concerning nuclear disarmament verification.

### **Why should scientists be involved in this effort?**

11. I referred to the UK-Norway Initiative earlier. What made it so special? Well, it was the first time a nuclear weapon state, a non-nuclear weapon state and a non-governmental organisation had collaborated on something as sensitive as nuclear disarmament verification. However, this is only part of the answer.
12. What made it special was the individuals that were involved in the work. The vast majority of us were scientists: nuclear engineers, physicists, chemists, and metallurgists. The others had a keen interest in science and technology. In my mind, science and engineering will have as much role in the abolition of the bomb, as it had in its creation.
13. Scientists and engineers will make sure that weapons slated for dismantlement are destroyed safely. The combination of fissile, radioactive materials and high explosives in a confined space means that they cannot just be crushed or burned, like an assault rifle or a tank. They cannot just be incinerated, like chemical weapons. They cannot be blown up, like mines or conventional explosives.
14. Scientists and engineers will make sure that the fissile material is removed safely, and destroyed in an irreversible way. Uranium and plutonium cannot just be dumped in a landfill. It cannot just be buried and forgotten. These metals will need to be stored in ways that are safe for future generations.
15. These are not easy problems. You cannot just wish them away. You cannot just say; the weapons are banned; let's get on with it. However, scientists and engineers will be able to guide us towards solutions that work in the real world: durable, robust solutions.
16. This is exactly why scientific expertise is required.

### **Getting on without science?**

17. Can you discuss verifiable and irreversible disarmament without a clear plan of how to do it? Is it enough to point at one-off experiences such as the International Atomic Energy Agency's mission in South Africa and say: we know how to do it? Are we prepared, technically and methodologically, to embark on the dismantlement of some 15,000 nuclear explosive devices? The scale of this challenge alone is breath taking.
18. If we do not have these answers, are we ready to embark on earnest disarmament ventures?

### **The application of science and technology**

19. In my mind, we can only get our answers by supporting scientific and technical investigations into the challenges associated with nuclear disarmament. A Group of Scientific Experts will help.
20. I am aware that some states are likely to object; asserting that it is a waste of effort as the preconditions to nuclear abolition has not arrived. I would want those people to recall the work of the CTBT-GSE. For the first 15 years of existence, there was no political appetite for a test ban. Despite this, the group continued to work. When political will returned, the systems were ready for use.
21. Some are likely to bring up costs. This is perhaps the most serious objection. We all know that research costs money, and sometimes a lot of it. Now, the CTBT GSE was funded through national governments that wanted to see action. Granted, the UN supported the effort, but this was done modestly, with a single member of staff that helped coordinate it all. I believe that the costs are small compared to the rewards that a scientific and technical collaboration could bring.

### **What can Japan do?**

22. Japan is a co-sponsor of resolution 57 and should be part of this effort. Japan is an established nuclear state, with a world-class cadre of technical and policy expertise that could be brought to the table. Many of you are represented here, today.
23. As a first step, Japan should give input to Mr Guterres report next year. It should describe its capabilities and offer thoughts as to what it would want to happen. It should highlight the need for technical and scientific engagement.
24. Secondly, Japan should nominate an expert to participate in the GGE in 2018. I expect that many governments would want to take part, but Japan should highlight its obvious competencies in nuclear verification. I am, after all, delivering this presentation in the country with the most nuclear verification experience in the world.
25. However, Japan should promote the concept of scientific engagement. But not only in regards to nuclear warhead dismantlement. There are a wealth of other issues that need to be considered. In

September last year, VERTIC published a series of publications on what type of research may be required, and I would, in particular, encourage you to read the primer.<sup>2</sup>

26. It is evident to me that Japan will have invaluable experience in most of these areas, and that your full participation will be of great value to the GGE, and hopefully a future GSE.
27. Science and engineering brought the bomb to being; science and engineering will be crucial in their abolition. I see no reason why this work should not start soon.
28. I thank you for your kind attention.

---

<sup>2</sup> See [‘The IAEA and Nuclear Disarmament Verification: A Primer’](#), Verification Matters No. 11, September 2015