
LIMITING THE PROLIFERATION OF WMD MEANS OF DELIVERY: A LOW-PROFILE APPROACH TO BYPASS DIPLOMATIC DEADLOCKS.

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HCoC
the Hague Code of Conduct

FONDATION
pour la **RECHERCHE**
STRATÉGIQUE

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Abstract

Since the creation of the HCoC in 2002, the need for more collective commitment and action to fight the proliferation of ballistic missiles has certainly not decreased. The destabilizing nature of these weapons has not changed. Non-proliferation is just less about keeping the world stable and more about not adding a risk factor to an uncertain future. The HCoC was and remains a response to that need, but certainly not the end of the quest for improvement.

To a limited extent, the HCoC and the MTCR mirror what the NPT and the NSG are for each other: two legs for the same non-proliferation system. One is open and focusing on commitment and activities, and the other one more closed, more practical and focuses on international trade control. But the HCoC is also a pragmatic way to compensate some acknowledged limitations of the MTCR, lowering commitments to increase membership. Criticism of the HCoC seems to demonstrate that it failed to get over the same “birth defect” as the MTCR: the perception that it is an instrument in the hand of the haves to serve their interest against the have not. But we can take this pragmatic approach in a different direction. We may focus on practical implementation rather than diplomatic commitment. Leaving aside the diplomatic posture, we may want to improve the attractiveness of non-proliferation, and in particular supply side controls, by improving the cost-benefit ratio of engaging in non-proliferation. Actions can be undertaken to enhance the perception of the benefits of non-proliferation activities for stakeholders. Conversely, much still needs to be done to decrease the cost of non-proliferation. Activities related to trade control in particular are an area where some challenges are resilient or evolving rapidly. These challenges are technical, including coping with technology and market changes, but also economic, strategic, organisational, legal and operational. If strong diplomatic dynamics are not driving such efforts, we must look for other drivers to push these changes. Agreements between governments are only one factor in the non-proliferation equation. In recent years, States had to make room for NGOs, if not public opinion, in shaping the international disarmament and non-proliferation environment. The ATT negotiations were a good illustration of this, but it is also obvious in the tools used for the day-to-day work of strategic trade control implementers. The topic of missile proliferation may not be as “morally attractive” as fighting the proliferation of mines or small arms, but it still includes a community of experts, academics and business actors. This civilian community is well positioned to undertake concrete actions to enhance the perceived benefits and lower the cost of non-proliferation. States and international bodies currently committed, should consider and encourage such contribution.

In this paper, we will first examine what makes concrete improvements still necessary. We will then describe some of the limitations of existing instruments, especially on the supply side. In the third and fourth part, we will explore the factors driving non-proliferation and export control as well as their various components which can be the focus of our efforts. We will finally look into concrete steps to improve the cost-benefit ratio of non-proliferation and the role civil society can play in this endeavour.

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1. INTRODUCTION

Amongst the four military domains traditionally described as weapons of mass destruction (WMDs): nuclear, chemical, biological and their means of delivery; the latter is often considered as “parent pauvre”, (literally “neglected relative”). It is not a WMD by itself and it is not supported by a dedicated international convention. Moreover, the civilian industry involved may not be as powerful as the civilian nuclear, biological or chemical industries. Yet, it remains an important element of WMD proliferation. Historically, and still predominantly, ballistic missiles have been the delivery means most closely related to nuclear weapons. They provide far ranges, high payload capacity, and short line of command and relatively fast engagement rules which are well suited to strategic nuclear deterrence. Other types of delivery means are foreseen or already in development, in particular advanced cruise missiles. But even when they are sufficiently advanced, they seem to be mainly conceived as complementing the backbone of a ballistic missiles arsenal. One can therefore explain why the MTCR has been mainly focusing on ballistic missiles and that the HCoC is solely focusing on these. Both international initiatives remain relevant as we see more WMD players, more instability, persisting or new regional tensions and ever more accessible dual use technologies. Both however have limitations. The MTCR, focusing on the supply side, is victim of the same birth defect as other regimes in the eyes of some non-members: a club of technology holders trying to maintain their advance or monopolies. Its limitations are also on the implementation aspects, and in particular, the numerous challenges of export controls of dual use commodities. With the HCoC, some MTCR members tried to take a pragmatic approach to gain more acceptability by focusing on the demand side and lowering the threshold of ballistic missile non-proliferation commitments. The strategy does not seem to have been entirely successful, judging from the absence of some key countries possessing ballistic missile and the lack of progress on the level of commitment. The international community must find other ways to move forward. In that endeavour, supply side controls may offer more flexibility and will therefore be the focus of our attention. We need to carefully look at both the drivers of non-proliferation and the technical components of export controls. On both aspects, progress is possible from various angles. We propose to look at the challenges and ways to tackle them from a cost-benefit perspective. Our assumption is that if non-proliferation is seen as more necessary or more attractive and that at the same time, it is made less costly and challenging, governments will be less reluctant to effectively engage in it. This path goes through a range of initiatives which may look less noble than ambitious diplomatic breakthroughs, but would be instrumental in achieving non-proliferation collective goals. Such initiatives are within reach of governments, international bodies, regimes and increasingly, the civil society.

In this paper, we will first examine what makes concrete improvements still necessary. We will then describe some of the limitations of existing instruments, especially on the supply side. In the third and fourth part, we will explore the factors driving non-proliferation and export control as well as their various components which can be the focus of our efforts. We will finally look into concrete steps to improve the cost-benefit ratio of non-proliferation and the role civil society can play in this endeavour.

2. WHY BALLISTIC MISSILES AND TO SOME EXTEND CRUISE MISSILES STILL POSE A SPECIFIC RISK

Before looking into the details of missile non-proliferation and possible improvements, we must first briefly review why we believe that the issue is still relevant in the current international context.

2.1. THE SPECIAL NATURE OF BALLISTIC MISSILES

First of all, we must outline the specificity of ballistic missiles. The first element of uniqueness is the genetic and symbiotic relation between ballistic missiles and nuclear weapons. This specificity might seem to fade as the use of cruise missiles for long range delivery of nuclear weapons is becoming a credible prospect and certain ballistic missiles are becoming precise enough to be suitable for conventional or chemical strikes.¹ But the truth remains that no country has attempted a nuclear weapons program without a related ballistic missile program.

Many new weapon technologies have appeared in recent years, but so far, no new “destroyers of worlds” provide the strategic and political benefits of credible nuclear weapons and efficient means to deliver them. Chemical and biological weapons, although classified in the same WMD category, do not play in the same league in this regard. We can still reasonably assume that nuclear weapons remain the only real WMD and ballistic missiles are still their delivery means of choice.

All these features are still relevant today, but does the ongoing transformation of international relations make it more or less of a global security threat?

2.2. AN ATTRACTIVE OPTION IN A NUMBER OF REGIONAL CONFIGURATIONS

The geopolitical situation is rapidly changing and will not be analysed in details in this paper. We may however notice that the credibility of the US security umbrella may be weakening in Asia and in Europe at a time when large military powers with both conventional and nuclear capacity are taking a more nationalistic, if not expansionist posture. In this environment, many medium powers could be tempted to reach out to WMDs and their delivery means, as a deterrence in an asymmetric configuration. The war in Iraq in 2003 and the absence of war in the Korean peninsula may have just demonstrated that possessing nuclear weapons and the ability to deliver them is indeed a protection against hostile approaches of super powers.

Old regional tensions with a potential nuclear dimension have not disappeared (Pakistan/India, DPRK/ROK, Israel/Sunni Arab countries/Shia arch) and new sources of tension have arisen or are looming, over access to natural resources, environmental issues, immigration and support to terrorist groups.

There is little doubt that these tensions will continue to fuel conflicts and in some situations, the desire to acquire WMD capacity, including credible and functional delivery means. The risk of conflict is even further increased by the rise of populist regimes, which tend to project popular

¹ Mark Smith: “Preparing the Ground for Modest Steps: A Progress Report on the Hague Code of Conduct”, *Disarmament Diplomacy*, Issue No. 72, August - September 2003.

frustration on external factors including imaginary or real security threats. Combatting WMD proliferation should not be perceived as competing with other human or strategic security priorities: it is about diminishing the potential consequences of these conflicts.

2.3. POLITICAL TRENDS

Evolution of the power system in a number of countries may also be taken into account in this landscape. The liberal, pluralist western democratic model has been losing ground and attractiveness in recent years, whereas it had been, to a large extent, leading the liberal, globalized and multilateral world order. Multilateralism which partly drove the non-proliferation efforts, including the MTCR and the HCoC, might decline in favour of reliance on self-defence capacity and bilateral diplomacy. Without getting into a detailed analysis, it is reasonable to expect that the interest in global security decreases in such circumstances.

Internally, the drift towards more centralized and individual exert of power in a number of countries fits well with what WMD can provide: an extremely centralized and concentrated strategic power and prestige, available to individual leaders seeking individual power.²

All these elements are both a reason to worry (less engagement in disarmament) and a reason for hope: more probability and consequences for WMD arms race leading to a greater awareness and eagerness to mitigate such risks.

2.4. TECHNOLOGY CHANGES

Like in other areas, ballistic and cruise missiles technologies are progressing in traditional technology holders and in countries which have developed capacity more recently. Advanced ballistic missiles are getting more precise, and increasingly seen as credible options for conventional strikes. We also observe the development of credible nuclear capable cruise missiles.³ These changes further blur the lines between conventional and non-conventional capacity. They undermine to a certain extent one of the foundations of demand side ballistic missiles controls (the WMD specificity of this delivery means), and further complicate supply side controls (increasing the list of relevant dual use technology and weakening their special nature).

The development of anti-missile systems is another element of technological development to take into account. Their effectiveness remains uncertain against long range massive strikes and their very advance technology still confines them to a very small club of countries. Ballistic missiles can still be perceived as having reasonable survivability before reaching target. However, anti-missile systems can also be a motivation to develop nuclear capable cruise missiles.⁴ Moreover, the development and deployment of anti-missile systems (e.g. recently in ROK), might be an additional

² Ballistic missiles are means of delivery which do not require large military units to be operated. They can be triggered relatively rapidly by a direct command line from the commander in chief, without depending on a powerful military apparatus. This characteristic certainly has advantages for certain political leaders fearing to be challenged by a powerful military leadership.

³ Dennis Gormley: "Making the Hague Code of Conduct Relevant", *Nuclear Threat Initiative*, July 20, 2009.

⁴ Cruise missiles appears to have certain advantages because their launch is difficult to detect and they are more difficult to intercept by anti-missile systems primarily designed for ballistic missiles.

motivation for proliferators to develop a defence saturation capacity by increasing the number of delivery means they possess.⁵

2.5. AVAILABILITY OF CAPABLE BALLISTIC AND CRUISE MISSILES MANUFACTURING TECHNOLOGIES

The last element to take into account when considering the relevance of missile non-proliferation is the availability of technology to manufacture them.

The technology used to manufacture these items becomes more accessible technically and economically. Some traditional missile manufacturing technology become more common, like the use of high performance material in the aerospace and consumer products. New ones have also appeared like 3D printing, which are ever more flexible and multi-use.⁶ These new trends are adding to the already existing dual use nature of missile manufacturing technology. One could even say that missile manufacturing technologies are dual use in three ways: with regards to Space Launch Vehicles (SLV) manufacturing technology, with regards to generic civilian manufacturing technology⁷ and with regards to conventional defence manufacturing technologies.

In addition to the diversified offer of technologies usable for missile manufacturing, we must also consider the changes in its accessibility worldwide. In all three dual use domains mentioned above, the potential sources of technology have migrated and spread across a larger number of countries in the past two or three decades, especially on the civilian market. It is particularly the case for East and South East Asia where a lot of high tech industries have migrated. We also observe the increased number of countries processing or seeking SLV and satellite capacity, which goes along with some missile relevant production and test capacity.⁸

The new manufacturing technology holders have yet to collectively embrace export control, and specifically MTCR and Wassenaar related controls. Hard won progresses have been made with countries like the Philippines, Vietnam, Malaysia or Thailand in South East Asia, adopting export control regulations. But even where such measures are in place, the implementation challenges are such, that much work is still needed to reach a satisfactory level of effectiveness. In this regard, many observers in the field could confirm the persistence of export control implementation weaknesses which is also well illustrated by published export control cases.⁹

Some countries outside the NPT regime such as Pakistan or early proliferators like the DPRK have already gone a long way in gaining technological independence, thereby decreasing the list of items of interest to export controls. They follow a typical proliferator's path starting with imported

⁵ Dennis Gormley: "Making the Hague Code of Conduct Relevant", *Nuclear Threat Initiative*, July 20, 2009.

⁶ 3D printers are now being used with metal powder and for the manufacturing of commercial turbofan engines parts.

⁷ For example carbon technology.

⁸ For example certain vibration and climatic test chambers listed by the MTCR are used to test electronic components resistance to space launch.

⁹ See for example Kings College Project Alpha Case Studies series, <<http://projectalpha.eu/case-studies/>>.

technology and components and moving towards autonomous capacity. However, even these countries face technological bottlenecks for which supply side control measures are still relevant.

Taking all the above argument into account, it is reasonable to assume that nuclear ballistic missiles and cruise missiles will remain at the centre of countries' WMD ambitions and capabilities. They remain an attractive, if not necessary companions of nuclear weapons and the global threat they represent. Combatting their proliferation remains a relevant endeavour.

3. THE LIMITED EFFECTIVENESS OF THE EXISTING INTERNATIONAL INSTRUMENTS

If we admit that combatting the proliferation of WMD capable missiles should be a non-proliferation priority, we must ask ourselves whether the international community is well equipped to reach non-proliferation objectives on the demand and on the supply sides.

3.1. TRANSPARENCY MEASURES AND DEMAND SIDE SELF-CONTROL

The most advanced multilateral attempt to establish multinational measures on the demand sides was the HCoC, which “was intended to develop into a global, multinational regime on ballistic missile possession.”¹⁰ But the idea was first to lower the common denominator to gain acceptance by a broader community of States than the MTCR. However, the cost of lowering the threshold to a “very low” level was rewarded with neither a very broad international adherence nor the prospect of evolution towards a farther reaching regime¹¹. The HCoC is facing the same diplomatic challenge it was trying to bypass, and which can be seen in other non-proliferation areas: the perception by the have not that it is just a tool in the hands of the haves to serve their security purposes while denying others access to technology and legitimate means of defence.¹² The attempt to erase the filiation between the MTCR and the HCoC does not seem to have completely succeeded.

In such circumstances, it makes sense to keep the pragmatic approach which motivated the HCoC, but take it further and towards implementation rather than diplomacy. We must here consider a practical approach in terms of both motivations and technical effectiveness. Trying to escape diplomatic postures might also mean focusing back on supply side controls, which, if agreed upon, have technical implementation dimensions complementary to more diplomatic transparency measures.¹³

¹⁰ Mark Smith, “The HCoC: Current Challenges and Future Possibilities”, paper edited with the support of the EEAS, < <https://www.nonproliferation.eu/hcoc/publications/> >

¹¹ Ibid.

¹² See for example Ajey Lele, “Taking the Arms Control Debate Forward: The Hague Code of Conduct and India”, *Strategic Analysis*, Vol. 35, No. 2, March 2011, 277–286.

¹³ E.g. technical definition of dual use items, enforcement apparatus, economic dimensions, counter-proliferation objectives.

3.2. EXISTING INTERNATIONAL INSTRUMENTS ON THE SUPPLY SIDE

At the international level, the MTCR is not the only regime serving the purpose of ballistic missiles non-proliferation. The Wassenaar arrangement and to a certain extent, the NSG are touching on technologies relevant to delivery means.¹⁴ All of these non-universal regimes, however, face similar diplomatic challenges including the same perception of unfairness by non-members. They also involve a technical dimension which deserve our attention because improving them might be an alternative way to move forward.

All three regimes have established similar guidelines, for example regarding the catch all clause, transit, transshipment and brokering controls. But they also include lists of items to be controlled. These lists are set up by experts of the different Member States (often few leading ones) and adopted by unanimity.

A first remark to make is that the lists concern technologies and items which are evolving rapidly, while the regime negotiation process is long, heavy and sometimes unsuccessful. One of the reasons is that the consensus has to be the result of compromises between diplomatic interests, economic interests, and individual experts' opinions. The rapid pace at which new high performance materials or 3D printing technology is evolving is particularly striking. Whether regimes can cope with the speed of these evolutions is not certain. Members of these regimes have somehow recognized this fact. Indeed, the introduction of the catch all clause concept can be interpreted in many ways (capturing items just below the controlled threshold, adapting the scope of controls to the end-user context, allowing countries to implement relevant measures which failed to trigger a consensus), but it may also be seen as a way to close loopholes created by the time laps between the occurrence of a technology or item and the adoption of corresponding controls by the regimes.

A second limitation is the fact that the decision process is separate for each of these regimes. When countries implement control lists, they find themselves with often different controls for the same item. For example, Filament Winding machines are controlled by all three regimes (Wassenaar 1.B.1.a., MTCR 6.B.1.a. and NSG/Part.2 3.B.4.). The differences can extend to the units used, methods of measurement, exceptions, scope, specifications, and many other parameters. Sometimes the distance between control languages is masking minimal substantial differences. Such differences may be technically justified, but such justification is not always worth the hurdle they create for implementers in Governmental services and in the industry. Some efforts have been made recently by the NSG to align itself with the Wassenaar arrangement on precision criteria for machine tools. But it remains an exception. One could also mention the EU compilation of lists from the different regimes.¹⁵ But this ordered compilation, however practical, still leaves all

¹⁴ One could argue for example, that certain listed flight test equipment like vibration test systems are related to space and atmospheric flights and re-entry capability. It is also not uncommon that in practice, interdictions of a material be legally based on one regime list (e.g. MTCR) while in fact, concerning a different WMD area (e.g. nuclear weapon).

¹⁵ Cf. *infra*.

the controls in their original language: the three control regimes on winding machines are there under 1B001, 1B101 and 1B201 respectively.

The last practical limitation we would like to introduce here is the lack of convergence between control regimes and other instruments regulating international trade. Control lists, for example, have been established from their inception without consideration for the customs classification system used in international trade. Signs of mutual interest and recognition have been only recent and limited. While such convergence is still full of technical challenges, an earlier and deeper mutual awareness would have limited some of the export control implementation challenges. This lack of coherence has a direct impact on national implementation as we will see below. Examples include the compatibility of export control regimes and UNSCR/1540 requirements, with rules and guidelines set by the WTO, the Revised Kyoto Convention, the WCO, if not certain international maritime laws.¹⁶ Progress have been made in recent years, with initiatives like the WCO Strategic Trade Control Enforcement initiative or Joint committees working on common issues in the Framework of the EU Dual Use Coordination Group. Much remains to be done however, to bridge the distance between the different work communities¹⁷ and to cope with the technical challenges it creates.

4. WHAT ARE THE MAIN DRIVERS SUPPORTING INTERNATIONAL NON-PROLIFERATION EFFORTS, AND WHERE DO WE STAND IN THIS REGARD?

Although many parameters have changes in the past 15 or 30 years,¹⁸ the proliferation of WMD capable missile must remain at the core of WMD non-proliferation. But what were and what are today the main drivers which could push the international community to overcome the shortcomings of current international instruments?

4.1. DIPLOMACY

For the HCoC as for regimes, treaties and other international fora, meetings have become arenas to express a stance or a frustration. Two phenomenon have in particular characterized international debates on disarmament in the past few years, making them different from the golden decade of non-proliferation: the increased contestation of the legitimacy of the haves by the have not on the issue of disarmament and technology access and antagonist postures of Russia on the one hand and the US and its close allies on the other hand.¹⁹

¹⁶ Such is particularly the case regarding transit, transshipment requirements and export verification processes.

¹⁷ For further analysis on the rift between communities involved in non-proliferation and nuclear security, see R. Chatelus et al. "Non-proliferation community, do we really speak the same language?", *IAEA Safeguards Symposium*, 2015.

¹⁸ HCoC was created in 2002 and the MTCR in 1987.

¹⁹ See "*Comment by the MFA of Russia on the US Department of State's report on adherence to and compliance with arms control, nonproliferation, and disarmament agreements and commitments*", April 2016, <http://russiaun.ru/en/news/mfa_comment15042016>

These questions have little to do with the technical way of curbing proliferation and are not likely to go away from traditional institutional forums in the foreseeable future. The will to make progress seems to have essentially come from some of the haves and the rich don't need,²⁰ mainly in the EU. The challenge the EU is currently facing as an organization is certainly not good news for the HCoC, for which the Commission and the weight of its 28 Member States played a key role. The diminished attractiveness of the EU model will also diminish countries incentive to reach the "European standards" in a number of areas including export control.²¹

One note of optimism could come from the fact that countries newly possessors of nuclear weapons want to demonstrate that they act like responsible nuclear powers, including in their efforts to put in place export control instruments.²² But the question is then whether there will still be an attractive "responsible global power" role model to refer to in the coming decade...

4.2. NATIONAL SECURITY

National security can be a direct incentive to support non-proliferation activities like in the case of Japanese technology used in North Korean ballistic missiles directly threatening Japan.²³ But one can wonder whether it could extend to supporting global security initiatives.

On the demand side, bilateral agreements seem to have been the instrument of choice to address security concerns, for example between the US and the former Soviet Union (and then Russia) or between Pakistan and India. On the supply side, linking non-proliferation directly to national security interests remains a hard sell to a number of countries which can be on proliferators' supply routes. Curbing WMD proliferation might look secondary in view of competing and more immediate national security threats, absence of WMD and missile threats from hostile nations, perception of being out the supply chains, perception that the proliferation of long range missiles is more a military issue than a WMD one.

But national security concerns may only rise with the increase of the range, payload and precision of missiles built by countries like North Korea and deployed by its many clients. Some new countries are now or will be soon be under the threat of WMD capable ballistic and if not cruise missiles, especially in Europe, Japan and South-East Asia. This comes in a context where the capacity of big powers to unilaterally impose disarmament or offer protection is in question; whether it is because of the weakening of the US umbrella or the inability of China to exert control over its close North Korean ally. All of this could further motivate countries previously not so

²⁰ Many European countries have been active in the HCoC initiative without having ballistic missile programs themselves.

²¹ This is especially true for countries which at some point hoped to join the EU and countries willing to be closely associated with it.

²² Typically Pakistan has stepped up export controls since 2004, including adopting the control lists of the four regimes, communication to the IAEA, all regimes guidelines as well as genuine capacity building efforts and requests for assistance.

²³ Several high profile export control cases and DPRK defectors' statements in the early 2000s pointed at DPRK extensive use of Japanese components and production equipment in its ballistic missiles and nuclear programmes.

concerned, in engaging in missiles non-proliferation, if they do not engage in proliferation themselves...

4.3. CONCERN FOR GLOBAL SECURITY

Historical motivations for non-proliferation include the will to promote global security. Unlike other arms limitation or disarmament domains,²⁴ curbing the proliferation of WMD capable missiles is not directly linked to human security. They are not weapons of use which can be correlated with civilian casualties every year. But some countries which have traditionally embraced a foreign policy which is “grounded in values of global justice and equity” and is “multilateralist, activist and driven by social values”,²⁵ are also historical promoters of ballistic missiles non-proliferation initiatives (Canada was a co-founder of the MTCR). The HCoC has been strongly supported by the EU and some of its member States, which were not necessarily the most directly and immediately threatened by the proliferation of WMD delivery means (e.g. The Netherlands, Portugal, Austria).²⁶

How much such motivations will resist the current wave of populism and isolationist nationalism in western democracies, and especially in Europe, is unknown.

4.4. IMPLEMENTATION

Why should implementation be a driver? It may seem paradoxical, but on the ground, implementation has its own dynamics, which contributes to global non-proliferation.

We must pay attention to the existence of a community of specialists within and around governments. The organisation of international meetings and initiatives mobilizes diplomats, academics and defence specialists who may buy in the topic more than others and become champions of the cause in their own governments as well as in international venues. Moreover, this community has personal incentives to maintain the momentum on a topic which gives them an opportunity to promote their expertise within their own government, if not foster their career and give them an opportunity to access the international scene.

In the area of missiles, the community might be less institutionalized than in the nuclear or chemical areas, but the existence of a regime and code of conduct is still a catalyst for such community. This community is not limited to governments and international bodies however; it encompasses a sphere of activity, budgets and specialists around it, in areas like academic research, capacity building, conceptual support to governments and international organizations and technical expertise. Nuclear security and export control capacity building programs offer a good illustration of this. One of the keys to success for all these assistance programs is to find and involve “champions of the cause” within partner countries, who can understand the technicalities of the

²⁴ We can mention here small arms and light weapons, anti-personal mines, cluster ammunitions and chemical weapons.

²⁵ Canadian Council for International Co-operation / Conseil canadien pour la coopération internationale, “Towards a Canadian Foreign Policy for Global Justice and Equity, Four Innovative International Initiatives and Key Recommendations”, *A Policy Note to the New Federal Government*, January 2004.

²⁶ Austria and the Netherlands were the first two chair countries of the HCoC.

topic, the overall objectives and are in a position to convince others within their governments of the importance of the issue. Conversely, the absence or rotation of such personnel is a common challenge for these capacity building programs. In general, the extensive strategic trade control capacity building programs of the EU,²⁷ the US and several international organizations, as well as operational cooperation activities from WCO COSMO operation to PSI, are essential to sustain the community and maintain the momentum on export controls.

In terms of export control implementation, international framework and national implementation are not the only drivers. The influence of the US export controls and particularly US enforcement activities has been feeding supply side non-proliferation activities.

Conducive of such influence are the international political weight, far reaching assistance programs, technical financial and human resources available for intelligence and enforcement, and possibly above all, the extra-territorial reach of US regulation. Companies and countries around the world are particularly wary of US law compliance because of the centrality of the US market²⁸ and currency²⁹ in the global economy combined with heavy penalties and sentences delivered by the US judicial system.³⁰ Of course, such US influence is an instrument of US policy. But in very concrete terms, the US global footprint on export controls (including the provision of operational intelligence to many other countries), is instrumental in maintaining the momentum on non-proliferation commitment and implementation. The Proliferation Security Initiative in an interesting case. It started under the Bush Administration with a small number of countries and strong criticism pointing at its US tropism. It is now endorsed by more than 100 states and is perceived by them as a practical tool to improve coordination and interdiction capacity at sea, rather than a diplomatic commitment.³¹ One of PSI main achievement is probably to maintain non-proliferation on the agenda of a number of countries and national services involved.

It is not clear how much the international community will be able to count on these four drivers of non-proliferation efforts in the future. Our attention should be directed towards motivations which are still there or likely to grow in the future. These include new direct national security

²⁷ These include assistance programmes from the US, the EU, several advanced States, the ODA and the 1540 committee, specialized international organizations (WCO, OPCW, NSG), and regional organizations (OSCE, GCC, CARICOM). We may mention here the historical EU-P2P programme (formerly Long Term program, established in 2004) and US programmes (DoE-INECP and other DoS-EXBS coordinated activities), but also a range of international programmes from the WCO, UNODC, OSCE and many others. Such assistance include drafting export control laws and organizational infrastructures, technical trainings of licensing offices and border services and interagency training and exercises.

²⁸ Few companies involved in international trade can afford being blacklisted for the US market and US companies.

²⁹ The USD is still the main international trade currency and any USD transaction in the world must be compensated in a US financial institution.

³⁰ This is particularly apparent in industry outreach events conducted by governments, international organizations and legal advisory firms.

³¹A. Vinod Kumar, "India Should Take Leadership Role in Indian Ocean Region", published online by *Boloji.com*, 22 February 2009.

interests of certain countries and the existence of a specialized community (although not as strong as in other WMD areas).

5. FOCUSING ON PRACTICAL COMPONENTS OF NON-PROLIFERATION AND EXPORT CONTROLS

Non-proliferation, and supply side controls especially, should not be viewed only from the international perspective. It is a set of national measures and policies established by a number of countries around the world. State governments remain in the driver's seat when it comes to such an economically, strategically and militarily sensitive issue. But there can be a significant distance between the international guidelines, State's commitment and the actual implementation. To understand where improvements are possible, we must get into more details and look at some of the components of national non-proliferation activities.

5.1. NATIONAL EXPORT CONTROL LAWS

Implementing export controls, especially on dual use commodities, require specific laws, whether they are for conventional military, nuclear, biological, chemical weapons or their means of delivery. Regime members generally have an appropriate legal system in place to implement the regime guidelines they are committed to follow. The 2004 UNSCR 1540 resolution universalized the requirement to adopt "appropriate effective national export and trans-shipment controls" with specific types of provisions. The resolution does not specify which control list to adopt, but makes reference to WMD and means of delivery. Subjecting exports to authorization without a law may be possible in countries with foreign exchange controls, State directed economy or simply limited rule of law. But even in these situations, it comes at a cost (legal insecurity for economic actors and foreign investors) and with limited effectiveness (in particular in the identification of proliferating trade amongst non-sensitive foreign trade operations).

Since then, many efforts have been deployed to promote supply controls and to support States willing to establish such controls. Progress may be seen as slow, since export control have not become a dominant norm outside the G20. Nevertheless these efforts have paid off in a number of cases. Progress has occurred on every continent, often driven by the necessity of integration or association (e.g. Georgia, Mexico), the need to access to technology (e.g. UAE, India), the will to be seen as a responsible international player (e.g. South Africa, Pakistan, India) or the desire to appear as a reliable economic partner (e.g. UAE, Malaysia, Singapore). Having an export control law in place is a pre-requisite for having supply side (and transit) controls on ballistic missiles, cruise missiles and drones.

5.2. CONTROL LISTS

Control lists are an essential element of export controls. They provide an objective instrument for companies and governments to identify potentially sensitive trade. They are not perfect. They are the result of technical, strategic and economic compromises between States parties to the regimes. But they provide much needed visibility and transparency to the private sector. Regimes lists are indispensable for many countries which do not have the means or the expertise to draft

such a list on their own. If cases exist of countries setting up a WMD Dual Use control list which is not copied, extracted, completed or adapted from regimes lists, they must be very few.

The EU has established an integrated control list³² compiling and arranging in one document the controls established by the four main export control regimes.³³ This integrated list of 600 to 2000 items (depending on the way to itemize them) served as a model for many countries, including the US. For many countries committed to follow UNSCR 1540 requirements and implementing export controls (whether or not member of a regime), it is a convenient way to have a well-organised, unique and updated export control list. Romania or Bulgaria which are not members of the MTCR are nevertheless implementing the EU regulation and its list, as part of their EU membership obligations. Other have adopted the list without legal obligations³⁴ and beyond the European neighbourhood like in Asia.³⁵ Many have adopted the whole list as it is regardless of their adherence to regimes or official commitments to their guidelines (Malaysia, Singapore, Georgia),³⁶ while others have adopted the list (or referred to it in their regulation) while removing the controls deriving from regimes they do not want to abide to.³⁷

As a result, the number of countries implementing MTCR guidelines is larger than the list of official MTCR members and the few “unilateral member” which formally pledged to follow MTCR guidelines. The EU list has become de facto an international standard, and through it, items listed by the MTCR find their way into export control systems. EU lawmakers and the commission should be encouraged to embrace their role in establishing international standards for regulations and control lists.

In certain cases, using UN entities and items sanction lists may also be a useful “inventive use of national laws”³⁸ to further non-proliferation purposes. Their end-use focus make them easier to implement than purely dual use regulations. They allow countries to implement export controls on delivery means, without necessarily adopting dual use export control lists or adhering to regimes guidelines. Unfortunately, the author’s experience is that countries which are not yet implementing export controls, are also not proactive implementers of sanctions, even in the most basic manner

³² European Commission Delegated Regulation (EU) 2016/1969 of 12 September 2016 amending Council Regulation (EC) 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

³³ Although additional elements were inserted like torture instruments and few modifications of control specifications.

³⁴ Frauke Renz, “An Additional Tool for Economic Integration? How Coordination on Strategic Trade Controls Can Promote Regional Cooperation within ASEAN “, *Strategic Trade Review*, autumn 2016.

³⁵ Thailand, Singapore, Malaysia and the Philippines for example.

³⁶ For example, Armenia’s control list is based on the Annex I of the EU regulation, but only for the entries related to the CWC and the Wassenaar agreement.

³⁷ The EU list also offers an opportunity to discriminate certain controls which could be subject to additional requirements. For example, especially designed items of the NSG list (INFCIRC/254/part.1, a.k.a trigger list) is sometimes subject to specific transit and transshipment licensing requirements, which are not implemented for other dual use commodities.

³⁸ Rebecca Weiner, “Proliferation Security Initiative to Stem Flow of WMD Materiel”, *Center for Nonproliferation Studies*, July 16, 2003.

(e.g. a systematic screening of export declarations against lists of sanctioned persons and organizations).

5.3. AN EFFICIENT LICENSING SYSTEM

Export controls are based on a licensing system, whereby companies (exporting, transporting, brokering, financing) are responsible for the identification of, amongst their trade operations, the ones requiring a license. They then submit a license request to the competent authority and proceed with the operation once they have obtained such permit. We may note that the vast majority of licenses are granted. Denials are rare.

States ability to run such a system requires capacities which are not always easy to set up and maintain. It includes the technical expertise to confirm the classification of an item as “dual use” and the strategic expertise to assess the end-use declared by the exporter. Despite extensive international capacity building efforts, many countries are struggling to find the required resources. They may turn to states with more capacity for assistance, often the same few western States which provide operational intelligence related to non-proliferation. However, counting on foreign support has obvious disadvantages for a government, in terms of sovereignty, but also because it cannot be done for every low-profile license application and may be limited by confidentiality and security concerns on the side of the assisting State. The recent efforts by regimes, including the MTCR, to publish their items list guidebooks is an undeniable progress. But such publications still need to reach practitioners through awareness, updating and translation.

Licensing authorities may turn to the private sector for support,³⁹ rely on the exporter’s legal liability to properly classify items, or make extensive use of internet generic and specialized web resources. Publications by specialized think tanks and research institutes play a key role here. A good example is the Risk Report published by the Wisconsin project,⁴⁰ a Washington based NGO specialized on export controls and non-proliferation. This database provides information on proliferation risks and export control violations. The resource has been used by export control services for several decades and is a vital tool for 30 governments around the world.⁴¹ Such a non-official resource is not perfect and can be criticized in different ways, but it is often the only tool reasonably accessible to licensing services to conduct an end-use and end-user assessment. Other non-official resources especially in the US and the UK, are valuable resources for end-use assessment by recording events, providing country profiles and publishing case studies.⁴²

Supporting these NGOs’ activities is as useful as official guidelines and international assistance programs.

5.4. ENFORCEMENT

³⁹ e.g. Armenia has externalized its technical classification assessment to private companies.

⁴⁰ <http://www.wisconsinproject.org>

⁴¹ The figure is provided by the Risk Report website, but is credible.

⁴² Examples include The Nuclear Threat Initiative (NTI), Institute for Science and International Security (ISIS), Kings College Alpha project, amongst many others.

Enforcement of export controls often relies on intelligence and customs (although not exclusively). Few countries dedicate intelligence resources to non-proliferation, but these countries trigger a large part of the export control cases taking place around the world. Nevertheless, most of the day to day enforcement of export control at the border is a customs process.

Customs enforcement of strategic trade controls is not short of challenges in terms of engagement and technical implementation. They range from dedicating resources to a domain not related to imports and revenue, to competing security priorities, challenges to identify shipments of controlled items and sustainability of investment in a low probability/high consequences topic.

Part of customs challenges are due to other stakeholders' lack of understanding of the complexity and importance of customs issues. They also derive from the fact that the international framework of customs work⁴³ does not take much into account non-proliferation requirements.⁴⁴

Two specific customs topics are especially needing improvements. One is the transit and transshipment issue, including control over free zones. Constraints set by international regulations, bilateral or regional agreements, or simply economic interests, are often at odd if not contradicting export control requirements.⁴⁵ Despite recent efforts of the customs community,⁴⁶ international trade still works on the principle of freedom with some exceptions in few areas⁴⁷ which do not necessarily include control over dual use proliferating trade.⁴⁸ The matter may be a bit easier with equipment which may be considered as military like category 1 MTCR listed items.

A second area of improvement is the correspondence between the lingua franca of customs and international logistics: the national commodity classification system deriving from the Harmonized System convention, and control lists set independently by export control regimes. As briefly mentioned earlier, both international systems have been ignoring each other for decades, setting the stage for challenges in areas ranging from trade statistics to companies internal

⁴³ This framework includes World Trade Organization rules, World Customs Organization guidelines, the The International Convention on the Simplification and Harmonization of Customs procedures (a.k.a Kyoto Convention), the The International Convention on the Harmonized Commodity Description and Coding System (a.k.a Harmonized system convention), a range of international conventions on maritime, air and road transportation, and regional or bilateral agreements on transit, trade facilitation and customs unions.

⁴⁴ R. Chatelus, "The Role of Customs in Strategic Trade Controls: Challenges and Potential, Taking a States' Enforcement Perspective", *Centre for International Trade and Security*, 2013.

⁴⁵ E.g. the revised Kyoto convention still states that Customs services should not seek to systematically verify the destination of exports (a focus perceived as hindering free trade).

⁴⁶ The WCO has set up a dedicated program in 2014 (STCE) to develop customs capacity. It consists of capacity building activities, implementation guidance documents, a dedicated communication system and coordinated operations. The WCO programmes embraces Strategic goods in a broad sense, including all the regime lists (i.e. the MTCR) and conventional weapons.

⁴⁷ For example, the Revised Kyoto convention recommends that Storage in public Customs warehouses and reception in Fee Zone should be allowed "for all kinds of imported goods liable to import duties and taxes or to prohibitions or restrictions other than those imposed on grounds of:

- public morality or order, public security, public hygiene or health, or for veterinary or phytosanitary considerations; or
- the protection of patents, trademarks and copyrights"

⁴⁸ One could also cite the principle of free movement of dual use goods within the EU single market, with very few specifically listed exceptions.

compliance programs, customs risk profiling and export legal processes, all of which are based on customs classifications system.⁴⁹ Correspondence tables have been established to bridge the two systems, but a recent study on a sample involving certain MTCR controls has demonstrated to what extent it remains a work in the making.⁵⁰ Tackling this challenge has been so far a challenge by itself due to the limited interaction between the two communities of experts, the legal, diplomatic and procedural rigidity on both sides⁵¹ and the absence of leading organizations capable of mobilizing resources for it (Government, international and regional organization, or non-governmental organization).

5.5. GOVERNMENTAL WILL

Governmental will is required to make the complex export control machinery work, for various reasons.

First, in most cases, it is not a “natural” national priority like protecting the national territory against terrorism or decreasing unemployment. Worse, it goes against some immediate national interests at first sight. The immediate domestic effect of an export denial (or self-restraint by exporting companies), is to deny an opportunity to create jobs and generate revenue from an export contract. It may even be to push some fragile small and medium businesses to bankruptcy, some of which may hold specialized capacity which the State wants to maintain.

Second, it is a complex machinery with many stake holders (typically anywhere between 7 and 15 ministries and services), whereas for most of them, non-proliferation is a marginal topic. Making each of these participants to export control systems dedicate necessary resources and coordinate towards the common objectives requires political drive from the top.

A third element is the fact that in many countries, export controls, and especially export control enforcement is a low probability/high consequences area. In many small to medium-sized countries an export control infrastructure was put in place for only few export licenses a year. It takes political will to sustain a capacity in such circumstances. Governments must not just be convinced of the high consequences of cases when they happen, but also that they are worth the investment. Here we will retrieve the same drivers mentioned earlier about countries motivation for international commitment: interest in global security, will to play an international role, building confidence among technology suppliers to obtain certain foreign investments, or reaching standards sets as a condition for international partnerships.

⁴⁹ The cost for companies, of manually searching control lists on PDF files, when other trade compliance can be automated based on customs categories, may not have been calculated, but it is certainly significant.

⁵⁰R. Chatelus, P. Heine, “Rating Correlations Between Customs Codes and Export Control Lists: Assessing the Needs and Challenges”, *Strategic Trade Review*, Autumn 2016.

⁵¹ Notably, The WCO HS committee has decided to take into account export control requirements for certain customs classification numbers, but these recent decisions, will not be in effect before the next HS revision in 2022.

On all of these domains continued outreach efforts are necessary, even more so for the delivery means which has been described as the “parent pauvre”⁵² of non-proliferation, and are not WMDs by themselves.

5.6. PRIVATE SECTOR ENGAGEMENT

The engagement of the private sector is a pivotal element of export control systems. These systems rely on the idea that companies will request a permit when they identify that one is needed, and that enforcement services would catch those who do not, whether voluntarily, by negligence or by ignorance. Governments do not have the resources, the knowledge or the tools to detect by themselves all private trade operations requiring a license. The compliance of a large part of the private sector is a precondition to the detection and prevention of illicit activities. This means that the private sector must be aware of the existence of restrictions on the export transit and transshipment of certain trade operations, which is not always the case; companies must have solid export control internal compliance systems, and be willing to spend some resources on it; export control lists and procedures must be business-friendly and compliance must be rewarded (and punished) by credible carrots and sticks. All of these elements are part of international capacity building programs and must remain high on the agenda of countries willing to establish a functional export control system.

6. IMPROVING THE COST-BENEFIT RATIO OF NON-PROLIFERATION FOR PEOPLE AND ORGANIZATIONS TAKING PART IN IT

In the previous paragraphs, we have seen that there is not much in the current context that would make non-proliferation of WMDs and delivery means less necessary. We saw the limits of existing international instruments including technical ones. We also observed that the drivers which have been pulling non-proliferation efforts are still there and that from a national implementation perspective, challenges are numerous. The questions we need to examine now is how to further missile non-proliferation despite the current diplomatic deadlock. We are proposing to look at it along two axes.

A first axis is to consider that engaging in non-proliferation, like any other human activity, results from a cost-benefit calculation by people and organizations involved in it. This means that on the one hand, we need to increase the perception of the benefits for the different stake holders, on the international scene and at the national level and on the other hand, efforts must focus on lowering the practical cost of non-proliferation activities.

A second axis is to take further in the idea which first gave birth to the HCoC, i.e. take a pragmatic approach to bypass the diplomatic deadlock blocking the MTCR. But instead of lowering commitment on the demand side, we may want to look at the practical components of non-proliferation, especially from the supply side. In other words, to detach implementation elements from politicised environments where States must take a political stance. Focusing on the supply

⁵² Literally “neglected relative”. See David Bertolotti, “Le Code de Conduite de la Haye contre la prolifération des missiles balistiques, le régime qui n’existait pas?”, *Annuaire Français de Relations Internationales*, volume VII, 2006.

side of non-proliferation also means that national authorities focus on export and transit to other countries. It does not affect directly the country's own self-defence capacity or strategic posture.

This will lead us to consider rather small steps, which may lack the elegance of great diplomatic achievements, but could have a real impact on the international community ability to limit the proliferation of WMD delivery means.

6.1. INCREASING THE BENEFITS OF NON-PROLIFERATION FOR STAKEHOLDERS

We looked at a number of elements driving non-proliferation. In the missile domain, access to technology on a mode similar to the NPT is not yet a reality.⁵³ It could be an attractive benefit for States, considering the rise of civilian use of space and the technical proximity of ballistic missiles and SLV technologies. But it remains an objective difficult to reach in the current climate of international distrust as displayed at NPT review conferences. In an era when global security is less in fashion and diplomacy is deadlocked, we may consider three domains where the potential benefits can be better perceived.

First of all, national security will certainly remain a driver. When conducting capacity building, one can notice that proliferation risks are competing with more direct national security risks like the ones related to CBRN material, weapons trafficking or terrorist activities. Putting non-proliferation efforts in the broader context of strategic trade controls can be instrumental in this regard. It is not necessarily an easy path for international programs and organizations with a specific non-proliferation mandate.⁵⁴ The WCO STCE programme however, manage to do that, by including weapons and explosives in a broadly defined category of strategic trade. On a broader level, regionalizing non-proliferation issues⁵⁵ can be a way to bring non-proliferation closer to national security concerns.⁵⁶

Second, sovereignty related arguments are often brought forward by countries opposing agreements like the MTCR or initiatives like the HCoC. The rationale is that they are instruments designed by technology holders to maintain their monopoly and deny access to it by others, whether for civilian or military purposes. But from a pragmatic perspective, the argument should be turned in favour of supply side export controls. Technically, export controls can be defined as a tool “to subject international trade between individuals and companies to a legal and political

⁵³ David Bertolotti, “Le Code de Conduite de la Haye contre la prolifération des missiles balistiques, le régime qui n’existait pas?”, *Annuaire Français de Relations Internationales*, volume VII, 2006.

⁵⁴ For example a program mandated for nuclear non-proliferation may be limited in addressing conventional weapons trafficking or chemical weapons proliferation.

⁵⁵ David Bertolotti, “Le Code de Conduite de la Haye contre la prolifération des missiles balistiques, le régime qui n’existait pas?”, *Annuaire Français de Relations Internationales*, volume VII, 2006.

⁵⁶ For example, non-proliferation of ballistic missiles is not an easy sell in western Africa, as one can imagine. However, the region is still a potential logistic route for WMD components, which needs to be closed. The attention of local services and decision makers can be captured better, once understood that terrorist and criminal organizations in the region may benefit from WMDs as weapons in their terrorist activities or as a source of revenue when trafficking them. See Renaud Chatelus, “Lessons learned from Strategic Trade Control enforcement capacity building in Western Africa, Confronting international approaches with regional context”, Contribution to *Modelling Dual-Use Trade Control Systems*, Chaudfontaine Group, ed.:P.I.E. Peter Lang SA, September 2014.

decision process.”⁵⁷ Indeed, in the modern world, sovereignty is not just defined against other States, it is also the ability to know of and control trade when relevant to the State’s interest. It is an increasingly challenging task in the globalized economy: in most parts of the world, international trade is essentially driven by the principle of freedom of economic actors (controls being the exception); supply chains have become complex to the extent that only a fraction of them is under a given States’ jurisdiction and; a number of international corporation have gained economic power putting them out of reach of individual States policies.⁵⁸ Having export control systems in place gives States the technical ability to know of trade operations which may have strategic and diplomatic consequences and, provide them with the legal capacity to authorize them or not. This argument should be put forward more strongly amongst diplomats who tend to focus on more traditional State-centred diplomacy. In its national implementation dimension, non-proliferation is also an instrument of sovereignty, not an abandonment of it.

Third, we must also consider benefits perceived by each stake holders in national non-proliferation apparatus. Although stake holders share in principle the same overarching non-proliferation purpose, they may have different specific objectives. To some extent, a good national export control system is the result of a good balance between stakeholders and a good convergence of their objectives: lawmakers might be interested in deterring non-compliance, enforcement services in making legal cases, the intelligence community in uncovering clandestine programs and procurement networks, licensing offices in good compliance of companies and minimal economic impact, etc... The personal interest of members of the non-proliferation community, which we already noted, might also fit in this list. It is necessary to seek for each of these actors, which specific benefit could motivate their involvement and design export controls accordingly.

Diplomats might be interested in a diplomatic posture, like in the case of Pakistan, which we previously mentioned. Government officials often cite UNSCR/1540 as instrumental in giving States an opportunity to demonstrate commitment and responsibility on the international stage. On the customs side, the WCO operation COSMO conducted in the fall of 2015 to fight illicit trafficking of strategic commodities involved more than 70 States, beyond the scope of countries formally committed to export controls. The motivation was not just return on investment, because seizures and legal cases are much less likely than in other illicit trafficking like narcotics, wild life, counterfeited goods or cigarettes. Part of this success is likely due to the international exposure that this operation was giving to customs services involved.

Economic benefits for companies and for countries must be mentioned here. Turning controls into an economic advantage is challenging, but possible. Commitment and compliance to export control can become confidence building measures, giving more access to investments and technologies from abroad. It could be argued that once again, the haves dictate restrictions to

⁵⁷ Renaud Chatelus, “The Role of Customs in Strategic Trade Controls: Challenges and Potential, Taking a States’ Enforcement Perspective”, *Centre for International Trade and Security*, 2013.

⁵⁸ To give a sense of proportion, we can compare the estimated annual US spending for nuclear weapon maintenance, research and development, and the annual R&D budgets of large international companies like Samsung, Intel or Microsoft. Both are in a similar range of USD 10-12 Billion (Respectively: Jon B. Wolfsthal & Jeffrey Lewis, “The Trillion Dollars Nuclear Triad”, *Report*, James Martin Center for Nonproliferation Studies Monterey, California, January 2014 and Booz and Co, “The 2013 Global Innovation 1000 Studies, Navigating the Digital Future”, March 2014).

others and grant exceptions according to their interest. But the concrete reality is that companies are reluctant to invest in countries which other trade partners do not trust. One of the main reasons is that investors fear difficulties in obtaining export licenses for production equipment, material and technology to be supplied to the production site. The case did happen and has been a motivation for establishing supply side control measures, in south-east Asia in particular.⁵⁹

All these arguments must find their way through outreach efforts to convince States and other stakeholders that engaging in non-proliferation and especially implementing export controls, can bring significant benefits. But benefits must also be measured with regards to costs. Here as well, a pragmatic approach should prevail and is sometimes overlooked.

6.2. DECREASING THE COST OF NON-PROLIFERATION AND EXPORT CONTROLS

The cost of non-proliferation has two dimensions: one is the cost of restriction for the economy, the other one is the cost of controlling for governments. Both dimensions are taken into account in the regimes decisions to introduce an item in the control list or not. Regimes members are reluctant to have controls on items which are too widely traded, hence generating too much licensing work and impacting too many companies. But it is not just a matter of scope, it is also a matter of efficiency.

Implementing export control is a challenging endeavour for intrinsic reasons, but also for practical reasons which may be easier to tackle. Many capacity building programs and initiatives are attempting to give countries and the private sector, the ability to efficiently contribute to global non-proliferation.⁶⁰ We have mentioned a few of these programmes already. But two areas in particular remain open to further engagement by the international community.

One is the development of practical tools to implement export controls, whether they are designed to help identifying possible dual use strategic items from large flows of traded commodities, to assess end use and end users or to legally assess the dual use nature of an item or technology. Investments in this area exist, but they remain scattered and insufficient. Practitioners are still struggling with some basic capabilities in many countries and companies. The result is inefficiency and increased implementation costs. Such practical challenges can be discouraging in an area still often perceived as a secondary priority by governments and companies' managers. When it comes to dual use items which might be used for the manufacture of missiles, detection and identification equipment are of limited help. By contrast, recent information technology could be adapted to better recognize and classify items (e.g. image recognition) or access, sort and analyse relevant information (e.g. data base and data mining technologies). Specialized resources like the

⁵⁹ For example, semi-conductor factories require a lot of corrosion resistant high vacuum equipment subject to export controls, because of their suitability for uranium enrichment. A company investing in such a plant in a country will need to be sure that licensing authorities of countries producing this equipment will have enough confidence to grant export licenses. The existence of an effective export control system in the recipient country offers some guarantees against illegal re-exports of the delivered equipment.

⁶⁰ In some regions, one could even observe a certain capacity building "fatigue" of the relatively small export control community, subject to multiple uncoordinated initiatives.

JRC Global Strategic Trade Atlas⁶¹ and published control lists guidebooks by several regimes (including the MTCR) are examples of useful initiatives to be funded and sustained. The design and maintenance of such tools calls for ambitious initiatives, which might be out of reach of most governmental or private stakeholders. Mutualisation of resources around common projects could provide the necessary resources to develop such tools.

A second aspect, which we touched on earlier in this paper, is the convergence of the various components involved in trade controls. There is a natural tendency of organisations and personnel composing them to drift towards specificities rather than seeking synergies and common points. When not addressed properly, it creates stovepipes, generate misunderstandings between people and organizations, inconsistencies between guidelines and laws, and eventually inefficiencies and loopholes. We saw that this tendency can be observed at the national and at the international levels, for control lists for example. The lack of correspondence between the customs classification systems and the definitions of control lists set separately by the regimes or, misunderstandings about transit, are also typical effects of this stove piping.⁶² Here too, ambitious collective initiatives are still needed to bring coherence to the international trade regulatory environment. The non-proliferation community should not spare effort to seek convergence of the various trade control instruments.

6.3. A ROLE TO PLAY FOR CIVIL SOCIETY

All the initiatives we mentioned above assume that States are willing to engage further in international or multinational non-proliferation initiatives like the MTCR or the HCoC. But for both international instruments, the current international context may not be favourable to breakthrough. We therefore might want look to other forces than the traditional states government and inter-governmental organizations. States are not necessarily the only potential contributor to non-proliferation. Different components of civil society can play a key role, following the example of other areas of non-proliferation and disarmament.

Many observers praised the role of NGOs in the Arms Trade Treaty negotiations, as an illustration of the increased role of NGOs in international relations. As noted by Bolton and Nash, “NGOs can effectively create space for governments to disagree with each other and for diplomats to take risks outside the formal mandates provided by their capitals”.⁶³ This could be an attractive path in a situation where progress is blocked by diplomatic postures. It is also well suited to the pragmatic approach we described in previous paragraphs: developing tools, conducting studies, establishing standards and passing messages, without going through a formal diplomatic process.

Mobilizing the civilian society around missile proliferation might be more challenging than around the proliferation of AK47 or personal land mines, which kill tens of thousands of people

⁶¹ C. Versino and P. Heine, “Strategic Trade Atlas, Country-based views”, *European Commission, Joint Research Centre – JRC*, Technical Report, 2016.

⁶² Cf. *Supra*.

⁶³ Matthew Bolton, Thomas Nash “The Role of Middle Power–NGO Coalitions in Global Policy: The Case of the Cluster Munitions Ban”, *Global Policy*, 2010.

every year in the world.⁶⁴ However, civil society is not only composed of activist organizations with a humanist agenda, but also of an academic and expert community on the one hand and on a business community on the other hand. Both can play a positive role as advocates of the cause and as providers of concrete solutions.

The domain of missiles might have produced a smaller non-proliferation expert community than chemical weapons and nuclear non-proliferation, which both benefit from dedicated international organizations and a community of professionals to tackle safety and security issues. Missile non-proliferation cannot rely on all that. But a community exist, made of people involved in international negotiations, active technical experts, retired specialists and academics. There is also a significant community of experts and academics working on non-proliferation in general, whose attention can be drawn to missile non-proliferation. Part of them can act outside formal international discussions, in the framework of universities, think tanks, capacity building programs, companies' compliance departments and law firms.

This community can undertake a number of tasks which we mentioned as means to lower the cost and increase the perceived benefits of non-proliferation. The Wisconsin Project Risk report is an interesting precursor in this field. But more could be done by NGOs, for example, to refine standard approaches to export control systems, in a way that would be better suited to low-industrialized countries;⁶⁵ to develop IT tools to support field activities; to design easy to use internet data mining systems; to identify criteria to better distinguish SLV from ballistic missile technologies; to establish efficient dedicated internal compliance concepts and tools. NGOs could further raise awareness amongst governments, regional organization and the private sector about the security risks posed by the proliferation of WMD delivery means and the need to mitigate such risks. These initiatives would require appropriate need assessment. They would also need to go beyond concept papers and sample studies. They would need to be focused on producing usable products, which in many cases means, dedicating significant resources and coordinating efforts. The existing forums like the HCoC and the MTCR can further contribute to all that by setting objectives, framing projects, investigating member-States' needs, coordinating initiatives or calling for member States contributions to issue grants. One can anticipate that such concrete, support oriented approaches would be less vulnerable to diplomatic hurdle than changing the scope of controls, enlarging the community of committed governments or strengthening regimes requirements.

NGOs are not the only players outside State Governments. The profit based private sector also has a role to play. In the domain of missiles, the aerospace and the military industry are prime actors, but more dual use industry like the machine tool and advanced material industry are also concerned. They have a strong interest in lowering the cost of non-proliferation. The international community could build on this interest. Big corporations and international professional associations could be more proactive in promoting compliance and non-proliferation as an ethical

⁶⁴ Estimates in the range of 25 000 victims circulate for land mines, while they reach ten times this number for AK 47.

⁶⁵ NGOs could take further the idea of hybrid control lists proposed by Van Beek to make export control more affordable for low to medium industrialized countries (D. J. van Beek *"Realizing the Hybrid Control Concept"*, 1540 Compass, Fall 2014).

standard for businesses. They could support practical means to achieve them. One could imagine for example, that professional associations sponsor the development of affordable internal compliance model systems for small and medium businesses with limited resources. Other lines of action may include proposals to improve the traceability of traded strategic items through procedures or technical means,⁶⁶ to support the establishment of relevant and up-to-date control lists, to propose measures to harmonize control standards and criteria and in general, to propose ways to increase national authorities' confidence in the non-proliferating nature of trade operations. The industry could also bring further its technical expertise to clarify the lines between items and technologies which are specifically missile related and those which are dual use or could be confined to the civilian industry. In the nuclear industry, the Botticelli initiative is an interesting example of an attempt to mobilize the industry around the objective of improving export controls.⁶⁷

More engagement on the part of the industry requires that it accepts the necessity of controls and focuses efforts on lowering the cost of controls rather than fighting them. NGOs, States and institutions engaged in non-proliferation can be instrumental in this enterprise.

Efforts to revive the HCoC should continue, but we should also seek progress on ballistic missile non-proliferation through less formal and less diplomatic approaches. Making non-proliferation less sensitive and less challenging, and exploring all the available leverages available to do so, should be an objective for all the communities concerned that the international scene may become an ever more instable and dangerous place.

⁶⁶ For example, mandatory maintenance or software obsolescence of machine tools can be used by licensing authorities as a licensing condition to increase confidence in the use of equipment after delivery.

⁶⁷ <http://www.angelominotti.com/site/wp-content/uploads/2016/02/Botticelli-Project-Charter.pdf>