



Can Congestion Charging be a Solution to Beirut's Chronic Traffic Problem?

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Abstract

The present paper gives an overview of how Switzerland faced terrorism in the past and how the country developed counterterrorism measures until today. The course offered by Leiden university covered a very large area in all studied topics and examples from all around the world were taken. It is interesting to compare these cases with Switzerland due to the specificities of this small, neutral, and often isolated country which is not known for being under high terrorist threat. However, it does not mean that Switzerland does not give attention to terrorism, extremism, and radicalization. Actually, it does, at his own level. Even though Switzerland is considered as a rich country, it is interesting to notice that it does not invest large financial resources while it would have the means. Are the current measures enough to efficiently prevent acts of extremism and reduce radicalization? This paper brings back the main terrorist events in Switzerland and gives the last policy measures, and developments taken by some police corps.



Introduction

Although Switzerland is a small country compared with other states in Europe and worldwide, it has been relatively spared from terrorism. Switzerland has always been considered as a rich country and its growing economic development has attracted the management of some world's largest fortunes, implicating it, sometimes, in relatively suspicious financial processes. Its principle of neutrality has also contributed to international recognition, attracting many international and humanitarian organizations, including the United Nations. Switzerland is deeply Christian and always had a strong religious involvement since its creation. Still today, the Vatican is under the protection of an exclusively Swiss guard. As well, Switzerland has a long humanitarian tradition and remains welcome land for foreigners. During the last decades, Switzerland had to face important immigration of Muslim foreigners, which generated some issues related to the extension of Islam in its territory. Because the Swiss citizens can give their opinion by a vote in case the government wants to modify legislation or implement a new law, some campaigns about religious changes involving Islam were somewhat sensitive. Despite its rejection to join the European Union and NATO, Switzerland remains strongly present at the international level, with involvement in international negotiations and light military presence abroad. However, the government sometimes adopts a very isolated policy.

Despite its favorable global position, is Switzerland facing radicalization? Does this represent an issue? Does terrorism threaten the country? This is what this paper will demonstrate in order to give a better overall understanding of the terrorism and counterterrorism situation in this small and often isolated country.

2. Terrorism History in Switzerland

Terrorist attacks in Switzerland mainly began in 1969, with actions against Swissair, the Swiss national aviation company[1].

- On February 18, 1969, a Boeing 720-058B was attacked by a squad of four armed members



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of the PFLP (Popular Front for the Liberation of Palestine), while taxiing at the Zurich International Airport. The perpetrators assaulted the aircraft with rifles, incendiary grenades, and dynamite that did not explode[2]. On the twenty-eight occupants including eleven crew members, one person was killed[3].

- On February 21, 1970, a Convair CV-990 Coronado belonging to Swissair crashed in Würenlingen forest/Switzerland. The airplane took off in Zürich to Tel Aviv with forty-seven people onboard, including nine crew members. None survived[4]. A bomb exploded nine minutes after take-off, and the pilots unsuccessfully tried to fly back to Zürich. The explosive device was in a parcel service envelope stored in the cargo zone and was triggered by altitude[5]. The PFLP claimed the attack. It seems that the bomb was not supposed to be on that flight but on the one from Munich to Tel Aviv. The bomb was diverted to this aircraft due to a delay from its initially planned flight[6] [7].

- On September 6, 1970, a Swissair aircraft was hijacked and diverted to Zerqa in Jordan, along with two other airplanes from different companies[8]. The terrorists blew up the planes after all passengers were safely released[9]. The attacks were perpetrated by the PFLP[10].

- On September 19, 1979, the German group Rote Armee Fraktion (RAF) carried out a bank robbery in Zurich during which a woman was shot dead. Some members of this unit were hidden and supported by the Swiss group Bändlistrasse[11], composed of young Swiss men and named "Swiss RAF". If the German RAF was mostly successful in its plans, the bomb attacks planned by the Swiss RAF all failed[12] [13].

- In March, 2014, a pro-ISIS (Islamic State of Iraq and Syria) Iraqi cell, composed of people between twenty-eight and thirty-three years old, was dismantled by Swiss authorities. The group was planning a terrorist attack with explosives and toxic gas. Also, they allegedly helped around forty Swiss or Swiss-resident jihadists to travel to the Middle East and to join ISIS[14].

- On December 11, 2015, the Geneva Police arrested two Syrian individuals. Traces of



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explosive were discovered in their car[15]. In addition, they were under suspicion of the manufacture, concealment and transport of explosives or toxic gases. They have not been clearly linked to the four men with suspected ties to the IS (Islamic State) group who were wanted by Swiss authorities at this time[16] [17].

- On August 13, 2017, a twenty-eight years old man was arrested in Annemasse/France, a small city located at the Swiss border. The following message was found in his mobile phone (in French): "We are going to blow ourselves up in Lausanne and in a church in Geneva, we see each other in Paradise, take care of my wife, give me the law to say to give allegiance to the Caliphate of Daesh[18] [19].

- In November, 2017, ten people were arrested in France and Switzerland, among them a twenty-three years old Colombian woman. Her husband, a Swiss citizen, is suspected of being the head of a presumed terrorist cell[20]. They were planning various attacks on Swiss cities and wanted to derail passenger trains and attack nightclubs in order to kill as many non-Muslim people as possible, and to attack venues that served alcohol and hosted events for LGBTQ communities. Attacks on Christian churches were also discussed[21].

- On December 29, 2018, a dual Swiss and Spanish national was arrested in Morocco on suspicion of aiding terrorists who beheaded two hikers (a Danish and a Norwegian) in the Atlas Mountains[22]. He converted to Islam in 2011 in Geneva's Grand Mosque; his conversion was quickly followed by radicalization[23]. Furthermore, this individual was allegedly part of an operation to recruit people to commit terrorist acts in Morocco[24].

- On January 10, 2019, another dual Swiss and British national was arrested in North of Morocco during the investigation about the murders of two Nordic tourists[25].

For the first time, a direct threat against Switzerland was mentioned by IS in January 2015 and then in November the same year. In a propaganda video, the swiss flag appears among others and the group called its fighters to act by terrorizing European populations, including Switzerland[26].



3. Radicalization and Swiss Foreign Fighters

As observed above, despite the fact that Switzerland is a small country, it had to face terrorism like many other countries. Even if it did not suffer from any terrorist act since years, the radicalization is present and still an issue. According to the data given by the SRC (Swiss Intelligence Cell) for February 2019, there are currently ninety-two people from Switzerland, among them thirty-one individuals holding a Swiss passport, in the Iraqi-Syrian zone[27]. Since 2001, seventy-seven departures have been reported to Syria and Iraq, fifteen to Somalia, Afghanistan and Pakistan, and one to the Philippines. Twenty-five of them are confirmed being deceased and thirteen are confirmed to have return[28]. As stated by Markus Seiler, the former director of the SRC, most of the jihad travelers from Switzerland are of foreign origin but Swiss converts to Islam are also feeding their ranks[29].

Among the examples, some mediatized cases can be mentioned:

- In February 2011, Majd N., a nineteen years old student, Jordanian refugee, left Switzerland and joined Jabhat al-Nosra in Syria. He was later reported killed in Iraq[30] but as well having been executed by IS members in Syria[31]. The circumstances of his death remain unclear.
- In 2013, a thirty years old Swiss citizen converted to Islam was radicalized via internet and left his country to Syria in order to wage the holy war alongside Al Qaeda. He could easily join the jihad with the support of a Franco-Belgian network. He came back after three months and was immediately placed under investigation and questioned by the police[32].
- At the end of 2014, Valdet Gashi left for Syria where he joined ISIS. The twenty-nine years old German kickboxer champion was originally from Kosovo and established a sports school in Switzerland where he had trained three young men between sixteen and twenty years old; all attended the same mosque and left for Syria to join ISIS[33]. Valdet Gashi was killed on June 2015 in unknown circumstances[34].



- In 2015, a Swiss woman followed her husband in Iraq and joined IS. Both were arrested by the Kurdish Forces in January 2018. She now wants to come back to Switzerland with her little daughter[35].

Other sources emphasize the fact some jihadists coming from Switzerland are taking higher ranks within IS, which could oblige the government to re-evaluate the threat level[36].

Even if Switzerland does not play a significant role in the terrorism environment, facts show that radicalization is present and still a current matter. In addition, it proves that terrorist groups are still following the evolution of Swiss policy, reacting on decisions that could reduce or slow down the extension of Islam. Thus, measures have to be taken in order to avoid possible future cases. Extremism and radicalization are here; not only through internet but as well from propaganda within some mosques, in all three linguistic areas of Switzerland, particularly in Lausanne[37], Geneva[38], Winterthur[39], and Lugano[40].

4. Counterterrorism Measures

Despite the fact that the Swiss Armed Forces are not involved in the Afghanistan or Iraq conflicts, some terrorist groups keep an eye on Switzerland. Indeed, on November 29, 2009, a popular initiative requested a vote about the constructions of minarets. 57,5% of the population showed its opposition[41] which generated the prohibition on building minaret in the entire swiss territory. This vote is an example of a how the threat level can rapidly increase, like the vote for ban the burqas in public[42].

Extremism, radicalization, and foreign fighters are topics that should be observed under different angles in order to be able to provide the most accurate and efficient reactions. Combatting extremism requests different measures than combatting radicalization or avoiding the departure of Swiss people for the jihad. But decisions cannot be taken without a precise overview of each case, individually. What are the best ways to gather information? Intelligence, cooperation between security and policy entities, links with other nations, confidence within all key players, exchanges of information, and so on. Despite the very light



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impact of Switzerland in international counterterrorism, the country established some measures to reduce the threat and manage the return of its foreign fighter citizens.

From a general overview, Switzerland is domestically engaged in four strategic fields of action: prevention, repression, protection, and crisis preparedness[43].

At the national level, in its “Plan on preventing violent extremism” published in 2016, the Swiss government mentioned the following spheres of action: contributing to prevent violent extremism policymaking and capacity building, developing and promoting contextual knowledge, dialogue and conflict prevention, strengthening good governance, human rights and the rule of law, engaging communities, empowering youth and women, education, training, skills development and promoting employment, strategic communication, internet and social media[44].

Switzerland has been accused to minimize the terrorist threat for a long time and this could be easily understood. Indeed, the government created a joined force under the name of TETRA for “Terrorist Travelers” only in 2014. This team bring together staffs from the Swiss Intelligence Service, Federal Police, State Secretariat for Migrants, Federal Prosecutor’s Office, and Cantonal Police Commanders[45]. The program describes the following steps in the process: Radicalization - Detection - Investigation - Criminal proceedings - Conviction - Enforcement - Reintegration[46].

In addition, the Federal Council established a cell called “Return of Jihad” as part of the national plan of action to strengthen the fight against terrorism. Before its creation, the focus was almost only on propaganda, recruitment and support to jihadists[47]. Taking in account that the return of foreign fighters requests a real awareness and clear deradicalization program is the first step towards success. However, the difficulty lies in the arrest of all jihadists returning. Indeed, it is impossible to be sure that all individuals representing a potential threat have been identify and are under surveillance.

At the cantonal level, most of the police corps did not reorganized themselves according to



the evolution of terrorism. Some changes occurred, but nothing significant. Among other improvements, the cantonal police equipped some of their agents with automatic assault rifles, not available daily but in extreme emergency situation only[48]. In addition, the medical kits have been improved by adding, for example, tourniquets[49]. Some cantons offer a hotline to prevent extremism. Everyone can call in case of suspicious behavior or to obtain information about radicalization and extremism[50].

As last point, it is interesting to come back in the 1970s and to have a look on how the Swiss government negotiated with the PLO. This tactic is as well a kind of counterterrorism measure; the ethic of this process will not be analyzed in this paper. Multiple sources claim that in 1970, the Swiss Foreign Affairs Minister Pierre Graber met with PLO officials in Geneva to negotiate a pact offering diplomatic support for the Palestinian cause in return for assurances to be spared from attacks[51]. Years later, under public and press pressure, the Swiss government investigated the case[52]. Despite extensive researches, this information has never been officially neither confirmed nor denied. Today, it is still unknown if this secret pact was agreed or not.

5. Policy Recommendations

Policy is one of the main tools against radicalization and management of the terrorist threat. But politicians cannot be efficient without strong cooperation with all actors involved in national and international security.

Keeping a deep observation on mosques known for having recently radicalized members and with unclear founds[53] must be maintained in order to stop the development of extremism networks. Due to the current key player's weak power of action[54], it is important to increase the possibilities of investigations and surveillance in case of suspicions. Switzerland has a direct connection with Balkans, known for having been an important source of extremists. A significant number of refugees from the last war arrived in Switzerland and the important Balkan diaspora still have strong links with their country. Many of these refugees obtained Swiss nationality and are frequently traveling to Kosovo or Bosnia and Herzegovina



visiting their relatives. Thus, it is very easy for extremists to build a network between Switzerland and Balkans.

If mosques could be a mean of radicalization, the internet should not be forgotten and a huge development on cyber surveillance and investigation should be rapidly established. Internet became a major propaganda tool for terrorist groups that are permanently developing communication strategies and are spreading high-quality videos. According to researchers Mia Bloom and Chelsea Daymon of Georgia State University, "use of new technologies and its risks should not be overlooked, especially considering that encrypted platforms have become a primary means for radicalization, recruitment, and planning[55]." This is why Switzerland must increase its focus on cyber investigation and have specialized experts in this area.

Can deterrence be used as a tool in order to limit the departure of foreign fighters? Even if it is not the case, it is important for a government to spread a clear message about the consequences in joining a terrorist organization. This point is heavily missing in Switzerland. Indeed, the case of a Swiss Army Sergeant who joined an IS militia in Syria from 2013 to 2015 is a clear example. Back in Switzerland, he was given a three-month suspended sentence and ordered to pay a fine of 500 Swiss francs (\$502)[56].

6. Conclusion

Switzerland is often seen as an independent country, sometimes close-minded and rejecting everything that comes from outside, and this vision is understandable. But despite its discretion and even if it is at a very low level compared to some other countries, Switzerland has to deal with extremism, radicalization, and terrorism. It is a chance to having been preserved but the country should take the opportunity to learn from other countries which did not have the same chance.

As seen, even if Switzerland is not involved in military operations in Afghanistan and Iraq, its attractive banking system and the wish of its citizen to forbid the extension of Islam signs by forbidden the constriction of minarets and banning the burqas in public generate a threat.



Even if there are only a few individuals who joined terrorist groups abroad, they should be considered as a potential threat. The way how they were radicalized should be analyzed and measures against radicalization through mosques and the internet should be developed.

The current policy measures are already a good start; however, it is essential to maintain a high level of cooperation between Intelligence agencies, and all key players. In addition, regular training on terrorist attack scenarios could be an excellent way to strengthen cooperation between emergency services and investigation teams and to keep everybody updated about the terrorism situation.

Conflict of Interest

The author declares no conflict of interest.

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Abstract

The problematic of using clean cooking fuel is a new concept in Rwanda, where more than the majority of the population lives in a rural area and use wood for all heating needs. With the government engaging in improving the health and protection of the environment, it becomes mandatory to look for alternative fuels not harmful or way to improve the methodology and the quality of stoves used in the country. One of the alternatives that have started but still needs various supports for a correct implementation is the use of Liquefied



Petroleum Gas (LPG). For the success of the transition from the use of charcoal to the LPG, both international organizations and the Government of Rwanda will provide substantial support.

1. Introduction

For centuries, the Rwandan population used firewood for cooking. They had enough natural forest, and in the nearest past, the equilibrium created by the newly planted forest granted enough resources to the community for their need for cooking. The problem started with rapid deforestation. The total area forested in Rwanda was 30% of total land area in the 1930s, reduced to 25.7% in 1960, and finally to 8.9% in 2000.^[1]

However, despite the effort to plant more trees, the country could not rely longer on his forest to produce enough firewood and charcoal. In-kind of situation, the country faces the imperative to look for alternative sources of energy that will not depend on the existing and newly planted trees.

2. The transition from cooking with charcoal to LPG gas (2018-2024)

2.1. Background

The period between the 1960s and 2010s the country recorded a decrease of forest clearance from 634,000Ha to 221,200Ha but the high increase of the population density from 129 habitants per sq. Km in 1960 to 417 habitants per sq. Km in 2010, let us anticipate that the use of woods for cooking will continue to increase. The only way to prevent forest clearance is to adopt new cooking methodologies and new cooking fuels.

Table 1: Population density vs. Forest clearance:^[2]



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Year	1,960	1,970	1,980	1,990	2,000	2,010
Population density	129	182	195	258	277	417
Forest clearance (x1000Ha)	634	592	514	451	384	221

Figure 1: Population density vs. Forest clearance

Electricity is one of the replacement, but it is too expensive comparative to the income of the population. Indeed, Rwanda practice tariff band for electricity power where for people consuming below 15KWh per month (less than 0.5KWh per day), the price is 0.11\$ per KWh; between 15 and 30KWh per month (0.5 - 1KWh per day), the price is 0.23\$ per KWh. Those two categories will not have the capacity to afford the electricity cost for cooking. The next bands of consumers between 50KWh and 100KWh per month will pay between 0.27\$ and 0.28\$ per KWh, [3] which is the highest electricity tariff in the East African Community.

Despite the excellent economic performance of Rwanda in the last few years with 761US\$ GDP per capita in 2018,^[4] the population still living with a meager income that cannot afford the cost of electricity for cooking with the actual electricity tariff.

The most affordable alternative cooking fuel is biogas developed from agriculture waste, biofuels, and petrol products and in particular, the liquefied petrol gas, commercially known



as LPG.

2.2. Insufficiency of wood and charcoal

Rwanda has progressively replaced its source of energy, especially for cooking from the firewood to the charcoal between 1970 and 1980. Then, under pressure created by the formalization of the country environment policy to the international standards, the Government increased planting more trees on one side and replacing the use of firewood and charcoal by other biomass products on another side.

Rwanda is part of the countries having the highest population densities in Africa with 471 persons/sq.km.^[5] For this reason, the population cultivates most of the arable land and plants some trees on the remaining areas. For decades, the country brought particular attention to the improvement of the cooking stoves to reduce the quantities of wood or charcoal consumed and started to look for alternative sources of energy that would replace the existing materials.

According to AGRICONSULTING S.p.A., the supply/demand balance in 2009 shows a national deficit of 870 thousand tons. This statement means that approximately 21% of the total woody biomass consumed is non-sustainable and is satisfied by marginal sources of biomass not included in the supply potential. This deficit is not trivial but is much smaller than previously estimated.^[6] The challenge is that important as the Ministry in charge of energy estimated the demand at 85% in 2015.^[7]

2.3. Cooking energy consumption pattern in Rwanda

According to the Fifth Integrated Household Living Conditions Survey published in 2018, 65% of households located in urban areas use charcoal as cooking fuel, 26% use firewood, and 5% use gas. The data are different in rural areas where 93% of households use wood, 6% of charcoal, and 0.2% of gas.^[8]



Despite the methane gas, Rwanda does not produce cooking gas, especially liquefied petrol gas. In 2018, only eleven importers were supplying the country with cooking gas. The importers transport all LPG by road tankers of 10-20 metric tons through either Kenya or Tanzania.

The retail shops vary from petrol service stations, supermarkets, and independent distributors, who sell the gas in different sizes ranging from 8kg to 50kg. The sellers transport the gas between cities with tanks of 100kg to 5 tons.

From 2012 to 2017, the usage of LPG has doubled. The consumption of liquefied gas for cooking remains low compared to other fuels, but we observe a significant increase in the use in urban and peri-urban areas. The government of Rwanda, through the Rwanda Utilities Regulation Agency (its regulatory agency), adopted administrative regulations on LPG in 2012 and started granting LPG business and installation licenses, and has updated them in 2017 by removing some gaps and resolving some of the problems relating to their technical, legal, and economic aspects.^[9]

The country has started the production of methane gas in Kivu Lake, but it still used principally for the production of electricity. For about two decades, the methane gas was serving to heat the boiler of the local brewery (BRALIRWA). Since 2015, electric power generation plants use methane gas to produce about 66 megawatts directly injected into the power grid^[10]. However, we can imagine a small share of domestic use. The problem is that LPG has a higher energy content at 93.2MJ/m³ vs. natural gas at 38.7MJ/m³, and that makes a choice advantage the LPG to the methane gas.^[11]

2.4. Environmental issues

Beyond the availability of firewood and charcoal, the most significant impact of wood and charcoal cooking is the effects on people's health and the environment in general. Each year in Rwanda, there are 5,680 deaths a year related to household air pollutants, 94% of whom are children.^[12]



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In Rwanda, actions to protect and conserve the environment started in the colonial period. Reforestation began in the 1920s, and in 1947 tree planting, radical terraces, bench dishes, and anti-erosion hedges became colonial policy. After independence in 1962, environmental protection declined for a time; it resumed in 1977, and the country adopted a national environment strategy in 1991.^[13]

In his environment policy, under Vision 2020 objectives, Rwanda committed decreasing within the national energetic assessment rates of diseases related to environmental degradation and firewood from 60% and 94% to 50%, respectively.^[14]

One of the approaches adopted by a Rwandan private company called Inyenyeri is to produce and sell a scalable, clean, and environmentally-sustainable cook stove.^[15] Several other companies engaged in a race for the protection of the environment through the search for alternative solutions to firewood and charcoal. Improving the cookstoves models using a clean alternative fuel contributes to a healthy, social, and environmental solution and contributes to economic growth and poverty reduction.^[16]

Rwanda has tested different biofuels, including ethanol, clean and environment-friendly, when used with the proper stove. In a comparative study of six types of improved stoves conducted by Jean de Dieu IYAKAREMYE, it appears that we can save up to 75% of firewood consumed annually by substituting them to the ordinary models.^[17]

Despite the good results obtained with the biogas produced from agricultural wastes, the development of the process has been quite slow because of the initial investment cost required to start the production.^[18] However, the Government of Rwanda grants 50% of subsidies to ensure that the initiative remains operational, and according to the multi-tier framework attributes for access to modern energy cooking solutions published by the World Bank Group, 72% of households are willing to pay full price for an improved biomass stove upfront or in six monthly installments.^[19]



2.5. Rwanda's effort to access modern energy cooking solution

A report published by the World Bank Group in 2018 entitled "Rwanda Beyond connections energy access diagnostic report based on the multi-tier framework" defines the measurement of access to energy by Tiers from zero to five, ranging from Tier 0 (no access) to Tier 5 (full access) along a continuum of improvement.^[20]

According to this report, the majority of the population (73%) have no access to clean energy, like electricity, and only 3.7% of the population have full access to electrical power, as presented in the following diagram.

Figure 2: Access to clean energy of households in Rwanda:[21]

Rwanda faces a double challenge in improving access to modern energy cooking solutions: a high percentage of households that still use highly polluting three-stone and traditional stoves and a meager rate of homes that use clean fuels. The ultimate objective is to provide all families access to cooking solutions that are clean, efficient, convenient, affordable, safe, and available (Tiers 4 and 5), but in the interim improved biomass stoves could be an immediate solution to move households in Tier 0 to Tiers 1-3.^[22]

The exposure to polluting cooking energy is different between rural and urban areas. We observe a slow but increasing use of clean energy in the metropolitan area where we record 2% of the usage of LPG cooking gas and 63.9% of households using an improved stove, while in a rural area only 22.4% households use an improved oven, and use of clean fuel stoves is negligible.^[23]

The transition from Tier 0 to Tier 5 will take time and will pass by intermediate cooking fuels and improved stoves on Tier 3 and 4 before reaching Tier 5, as presented in the following table.

Table 2: Stove emission tier:[24]



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Type of fuel	Description of level	Tier
Firewood, dung, twigs, and leaves	Three-stone, tripod, flat mud ring	0
	Conventional improved cookstove	1
	Improved cookstove with chimney, rocket stove with conventional material for insulation	2
	Rocket stove with high insulation, rocket stove with chimney (not well sealed)	3
	Rocket stove with chimney (well sealed), rocket stove gasifier, batch feed gasifier	4
Charcoal	Traditional charcoal stoves	0
	Old generation improved cookstoves	1
	Conventional improved cookstoves	2
	Advanced insulation charcoal stoves	3
	Advanced secondary charcoal stoves	4
Rice husks, pellets, and briquettes	Natural draft gasifier (only pellets and briquettes)	3
	Forced air	4
LPG and biogas; electricity		5



2.6. Forecast transition to LPG cooking gas

In his report, the Global Alliance for Clean Cookstoves divides the market for improved cooking stoves into four segments, reflecting different incomes and abilities to support the cost.^[25]

Table 3: Cooking stoves market segment

#Market segment	N° of households	Current cooking device	Willingness to pay for improved cooking stove
1 Charcoal	316 000 (13%)	Charcoal stove	Have the ability to pay
2 Wood	711 000 (29%)	wood stoves	Can probably afford to pay
3 Biomass collectors (priority areas)	305 000 (12%)	Three stone fire stove	No change expected because of the lack of disposable income. However, a limited number could pay.
4 Biomass collectors (others areas)	1 100 000 (44%)	Three stone fire stove	Low, little to no disposable income

In 2013, the Rwanda Natural Resources Authority (RNRA) had ordered a forecast study on demand for cooking fuel for 2020 that was conducted by AGRICONSULTING S.p.A. projecting the situation to 2020.



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In one scenario, when considering doing business, depicting the probable situation in 2020 if nothing special is done to change the current status. This scenario assumes stable per capita consumption values and typical trends in the penetration of alternative fuels, such as LPG, as an effect of economic growth. In the second scenario, the demand for woody biomass for energy and construction in 2020, the need in Kigali City Province shall cover 27 % of the national consumption, when both studies were projecting the use of LPG in Kigali from 7.6% in 2009 to 15-30% of the total demand.^[26]

According to the Ministry of Infrastructure, the use of LPG has increased tremendously since 2016 years to reach about 10,000 tons of LPG per annum, and this is expected to increase to more than 240,000 tons by 2024.^[27]

The fact is that all the alternatives to the LPG present major inconvenient linked to the environment or harmful to people's health like firewood and charcoal, and are discouraged by the government for this reason. A certain number of cooking fuels are, however, less harmful and are tolerated, like biogas, methane gas, and electricity.

To reduce the risks linked with firewood and charcoal in cooking, the government of Rwanda took measures and committed on target to reduce from 83% of the population using wood for cooking to 42% by 2024, as represented in the table below.^[28]

Table 4: Forecast firewood reduction

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Household using firewood	83%	75%	67%	58%	50%	42%

The country encouraged the use of biogas for years, principally in public places like hospitals, schools, military barracks, and prisons, from latrines waste and agriculture wastes. For a limited number, some private institutions like motels have constructed a biogas system and



keep them operational — however, the upfront cost for the construction of a biogas system still expensive for general use.

The consumption of charcoal for cooking can cost up to 36,000 francs per month for a family in Rwanda when one bottle of 24kg costing 28,000 francs would be sufficient for the same family and the same period and be less harmful. However, most of the families do not realize that charcoal is more expensive as they buy it in small quantities daily.^[29]

The Government of Rwanda encourages the use of clean cooking fuel and in particular, the use of LPG, and for this reason, he keeps up sensitization campaigns and also puts up more incentives to enable gas suppliers to do their job. The essential motivation implemented was to avail public gas storage facilities for LPG suppliers across the country, setting up LPG strategic stocks to use in case of severe shortage, and waiving taxes on gas accessories.^[30]

3. Conclusion

The transition from cooking on the charcoal to LPG still at the beginning with some difficulties, like the cost and cultural habits, but the trend shows that more people, especially in urban areas, are attracted by LPG and are willing to change.

With the encouragement and commitment of the government to support the transition by incentives and continuous sensitization, the population becomes aware of the ecological risk of cooking with wood and charcoal and understands the need to adopt clean fuels for cooking. The projection of the Ministry of Infrastructure forecasts the consumption of more than 240,000 tons of LPG by 2024, representing 4.2% of the full demand.

In line with the internal policy of the World Bank Group to increase access to clean energy and especially the use of LPG in cooking in developing countries, Rwanda committed to reaching 25% LPG penetration in urban areas by 2030.^[31]

Furthermore, in May 2018, the Government of Rwanda and the Global LPG Partnership



(GLPGP), a United Nations-backed public-private partnership, signed an agreement to bridge collaboration on national LPG scale-ups to reach the target of expanding to 40% of its population the availability of LPG by 2024.^[32]

Conflict of Interest

I, Ladislav HAVUGIMANA, declare that no conflict of interest has guided or has influenced the research conducted for this article.

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Abstract:

Violent conflict can have a devastating impact on individuals, communities and societies. This is evidenced by the destruction wrought by the two world wars, which claimed millions of lives, required billions of dollars for reconstruction of conflict-affected countries, and continues to have a profound physical and psychological impact on the international state system today. The United Nations is the principal international institution that emerged from the second World War, with the enormous responsibility to “save succeeding generations from the scourge of war,” in accordance with the UN Charter. It has made concerted efforts in this regard, in terms of conflict prevention, conflict management and resolution, promoting human rights and fostering development. This paper examines the preventive diplomacy efforts of the UN, in cooperation with other intergovernmental organizations, in view of the increasing and diverse challenges faced by the Organization in today's complex and interdependent world.

1. Introduction

There is an old saying that prevention is better than cure. Nowhere perhaps is this more pertinent than in the case of international peace and security. Violent conflict can have a devastating impact on individuals, communities and societies. This is evidenced by the destruction wrought by the two world wars, which claimed millions of lives, required billions of dollars for reconstruction of conflict-affected countries, and continues to have a profound physical and psychological impact on the international state system today.

The United Nations is the principal international institution that emerged from the second World War, with the enormous responsibility to “save succeeding generations from the scourge of war,” in accordance with the UN Charter. It has made concerted efforts in this regard, in terms of conflict prevention, conflict management and resolution, promoting human rights and fostering development. This paper will examine the preventive diplomacy efforts of the UN in the view of the increasing and diverse challenges faced by the



Organization in today's complex and interdependent world.

2. Background

2.1. Early Prevention Efforts

The end of World War II heralded the introduction of a new international architecture for conflict prevention, based on the foundation set out in the UN Charter, and aimed at “reducing the risks of interstate conflict”[1]. Chapter I, Article 1 of the Charter states that the main conflict prevention objectives of the UN are “to maintain international peace and security, and to that end: to take effective measures for the prevention and removal of threats to the peace, and . . . to bring about by peaceful means . . . adjustment or settlement of international disputes or situations which might lead to a breach of the peace”[2].

Initially, peacekeeping missions were deployed to monitor interstate ceasefires (Israel and Lebanon, 1948; India and Pakistan 1949). However, towards the end of the cold war in the late 1980s and early 1990s, the emphasis shifted towards resolving intrastate conflicts and ending civil wars. The associated approaches included mediation of political settlements, and greater investment in peacekeeping operations to implement the agreements, as in the case of Cambodia and Mozambique. A preventive approach placed a greater emphasis on prevention of further escalation of conflict rather than preventing the outbreak of the conflict in the first place, or addressing its root causes. It was therefore not surprising that in several cases, there was a recurrence of conflict, often with devastating consequences in terms of loss of life, property and livelihoods.

2.2. The Agenda for Peace

In 1992, there was a renewed focus on the prevention efforts of the UN. The Secretary-General's report, *An Agenda for Peace*, presented the following definition of the preventive diplomacy: “action to prevent disputes arising between parties, to prevent existing disputes from escalating into conflicts, and to limit the spread of the latter when they occur”[3]. The



report introduced the term “post-conflict peacebuilding,” which was defined as “comprehensive efforts to identify and support structures which will tend to consolidate peace and advance a sense of confidence and well-being among people”[4].

However, the inability of the UN to adequately respond to the conflicts in Rwanda and the former Yugoslavia highlighted the ineffectiveness in the prevention capacity of the UN, and in particular of the Security Council. The first comprehensive report by a Secretary-General focused solely on conflict prevention was produced in 2001. This report made the distinction between operational prevention (actions taken in an immediate conflict), and structural prevention (longer-term actions aimed at addressing root causes of conflict)[5]. Later that year, the unfortunate attacks of 9/11 would take place, resulting in a shift of focus of the Security Council from conflict prevention to counter-terrorism.

At the World Summit in 2005, world leaders made a commitment “to promote a culture of prevention of armed conflict as a means of addressing the interconnected security and development challenges faced by peoples throughout the world, as well as to strengthen the capacity of the United Nations for the prevention of armed conflict”[6]. The 2005 World Summit established the Peacebuilding Commission as an “intergovernmental advisory body”[7], supported the Secretary-General’s efforts to strengthen his mediation capacities, and endorsed the concept of the “Responsibility to Protect”[8].

2.3. Towards Sustaining Peace

Globalization and the increasing interdependence of the world has brought with it a change in the nature and causes of conflict. Today’s conflicts are no longer interstate, but are also intrastate, and do not only involve conventional military forces. The combatants also include non-state actors, who have “transnational goals”[9]. Many of these conflicts also risk spilling over into neighboring countries, and so the internationalization of domestic conflicts is of primary concern.

The international conflict prevention architecture is currently confronted by other “new and



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complex challenges [that] have arisen since the end of the Cold War that range from terrorism and violent extremism to cybersecurity, from climate change to massive forced displacement, and from global illicit activities to outbreaks of disease”[10]. In August 2007, a presidential statement of the Security Council noted that conflict prevention strategies should incorporate systemic prevention (measures taken to address transnational threats, and “to prevent existing conflicts from spilling over into other States”[11]). The need to address these challenges adequately prompted three reviews of the UN’s peace and security architecture in 2015: the High-Level Panel on Peace Operations (HIPPO); the Advisory Group of Experts (AGE) review of the peacebuilding architecture; and the Global Study on Women, Peace and Security.

The HIPPO report pointed out that conflict prevention remains “the poor relative of better-resourced peace operations deployed during and after armed conflict” and warned against the “chronic severe under resourcing of prevention activities”[12]. The AGE report emphasized that “peacebuilding is an activity that happens not only in post-conflict situations but rather as a process before, during and after conflict”[13]. The AGE also proposed the concept of “sustaining peace” as more appropriate to describe the comprehensive nature of peacebuilding. This report led to the Security Council and General Assembly issuing twin resolutions on the peacebuilding architecture. These resolutions defined sustaining peace as:[14]

Activities aimed at preventing the outbreak, escalation, continuation and recurrence of conflict . . . and should flow through all three pillars of the United Nation’s engagement [peace and security, human rights and sustainable development] at all stages of conflict.

The Global Study on Women, Peace and Security, which looked at both operational and structural causes of conflict, reaffirmed the link between peace and development, and called on the UN to “support women’s engagement . . . in preventive diplomacy efforts”[15]. In 2015, the UN General Assembly also adopted the 2030 Agenda for Sustainable Development, which consists of the 17 Sustainable Development Goals. Included among these is Goal 16, which again emphasized sustainable development as a prerequisite for peace and vice versa:



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

3. Examples of UN Preventive Diplomacy

3.1. UN in the Lead

UN preventive diplomacy is an aspect of conflict prevention that is a “means to engage with individual actors” and to “influence their strategies in situations at risk of conflict”[16]. UN preventive diplomacy interventions include 1) undertaking good offices; 2) supporting domestic and regional prevention; and 3) international coordination. The good offices activities include engaging with the parties to find peaceful solutions, facilitation of dialogue, and mediation[17].

In Burkina Faso in 2014, following an attempted coup by former members of the presidential against the transitional authorities, the Special Representative of the Secretary-General for the UN Regional Office for West Africa (UNOWA) together with ECOWAS engaged with the coup leaders to convince them that “they did not enjoy political support.” They also worked with national political actors and civil society organizations to engage in dialogue. These efforts by a UN Special envoy, along with unified messages from the regional political actors and the international community, supported by staff from UN HQ, ensured timely preventive diplomacy intervention. This led to a revised constitution and restored transitional arrangements leading to successful elections in 2015[18].

In Kyrgyzstan in 2010, the UN Regional Center for Preventive Diplomacy (UNRCCA), and in coordination with the EU, OSCE and the UN Country Team supported the efforts of a UN Special Envoy, who had been sent to address a political and humanitarian crisis there. The conditions of instability were caused by “nationalist, extremist and criminal groups” in the south of the country, as well as by clashes between the most populous ethnic groups, Kyrgyz



and Uzbeks[19]. The joint efforts involved “capacity-building . . . facilitating regional dialogues, especially around terrorism, water and energy; and providing aid to displaced Uzbeks”[20]. This allowed for the de-escalation of tensions and the creation of an environment for a reform process and eventual elections.

Within weeks of the protests that claimed several lives in Malawi in 2011, the Secretary General dispatched an Envoy to the Southern African nation. The work of the Envoy, which was supported by analysis provided by the UN Resident Coordinator and UNDP Resident Representative on the ground, involved engaging with the Government and civil society to desist from activities that would escalate the conflict. Moreover, both parties were persuaded “to accept a UN-facilitated dialogue,” and the subsequent discussion of the procedural aspects of which were facilitated by the UN Resident Coordinator, until such time as an external facilitator could be identified[21].

3.2. UN in Support

The UN also plays an important role in support of preventive diplomacy efforts of regional and sub-regional organizations. In the wake of the post-electoral violence and loss of life in Kenya in 2007, the African Union appointed a mediation team to help the parties to find a way out of the conflict. As a member of the technical support team for these talks, I personally witnessed the UN System, both in Nairobi and in New York, heavily supporting the mediation efforts of the AU team through the provision of political and humanitarian analysis, electoral technical advice, as well as financial and material resources. The UN team also coordinated with the technical support teams from the AU and Centre for Humanitarian Dialogue in the provision of secretariat services to the mediation team.

In Yemen in 2011, a youth uprising demanding the resignation of the country's president turned violent after lethal force was used by the government. This led to an agreement in principle by the President to step down, and a subsequent initiative by the Gulf Cooperation Council to assist the Yemenis in drafting an agreement on the terms of the president's departure. However, there was no implementation plan for the agreement. The Secretary-



General sent a Special Advisor to Yemen, who assessed that “the UN’s added value lay in helping develop an [inclusive] implementation plan”[22]. The Special Advisor coordinated with GCC, keeping the Security Council informed, resulting in the passing of a SC resolution on October 2011 that “urged the parties to comply with the terms of the GCC initiative,” and the implementation plan. Three months later, after the holding of elections, the President finally stepped down, transferring power to his deputy.

4. UN Preventive Diplomacy Tools

While the General Assembly, the Economic and Social Council and the International Court of Justice all have important roles in the prevention of conflict, it is the Security Council and Secretariat that bear the brunt of the burden in the UN’s preventive diplomacy. The UN Security Council has several tools at its disposal for taking preventive action, one of which is the visiting Security Council mission. In this regard, all or part of the membership of the Security Council may undertake visits to countries at risk of conflict, for the purposes of “information gathering, support for peace operations and peace processes, conflict mediation and preventive diplomacy”[23].

Article 34 of the UN Charter gives the Security Council the mandate to “investigate any dispute, or any situation which might lead to international friction or give rise to a dispute”[24]. Actions under this mandate include “commissions of inquiry, Council fact-finding missions and the establishment of investigatory subcommittees of the Council”[25]. Another set of tools available to the Council under Article 41 of the Charter are sanctions, which can be applied to influence the behavior of parties in order to prevent armed conflict. The Council also created the Peacebuilding Commission (PBC) and through the twin resolutions on sustaining peace have created a framework for greater engagement between the Council and the PBC.

The UN Secretariat, for its part, employs a diverse range of mechanisms in its conflict prevention toolkit, including special envoys (senior diplomats deployed by the Secretary-General to resolve a diverse array of disputes); special political missions (ensuring sustained



preventive efforts in a country, across a range of disciplines); and peacekeeping operations (integrated civilian, police and military operations aimed at providing security, political and peacebuilding support)[26].

Regional offices (platforms for preventive diplomacy, supporting national actors, UN Country Teams, and regional organizations); standby mediation experts (senior mediation practitioners able to deploy at 72 hours' notice); UN country teams (the UN in-country presence of agencies, funds and programmes); and Resident Coordinators (senior UN officials who coordinate the efforts of the UN Country Team) provide the requisite country-specific and technical expertise that is required to support preventive diplomacy initiatives[27].

Other tools at the disposal of the UN Secretariat include electoral assistance (electoral experts deployed to support the conduct of credible elections); gender and inclusion expertise (experts deployed to ensure gender mainstreaming and inclusion in the national social and political processes); and political and human rights analysts (providing analytical capacity where there are risks of serious human rights violations). Sanctions monitoring groups (Panels of Groups of Experts deployed to monitor implementation of sanctions regimes) are also employed in particular circumstances[28].

5. Obstacles to Effective Preventive Diplomacy

While the importance of conflict prevention is undeniable, the effectiveness of the UN's preventive diplomacy efforts has come under question following outbreaks of violent conflict around the world. According to the UN/World Bank report, "Data suggest that, while diplomatic engagement is the most common form of international recourse in violent conflict, evidence of its ability to halt the outbreak of conflict is mixed"[29].

There exist several challenges to the UN's efforts at preventive diplomacy. Within the Security Council, for example, divisions exist over the extent to which there can be "external



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involvement to prevent or mitigate conflict,” given that the UN Charter places a great deal of importance on the issue of state sovereignty[30]. Some Security Council members who agree with this view, believe that such interventions “can have the effect of exacerbating instability and conflict,” and are suspicious of the motives of the proponents of intervention[31]. Critics of this viewpoint suggest that this is simply a way to “protect . . . allies from international scrutiny.” The political interests of Security Council members, especially when “one or more . . . is party to a conflict or provides support to one of the parties,” have therefore also inhibited timely prevention efforts in several conflict situations[32].

The report of the Advisory Group of Experts highlighted several challenges to effective peacebuilding by the UN, several of which also apply specifically to preventive diplomacy activities. The fragmentation of the UN System, with responsibilities distributed among the various Departments, Agencies, Funds and Programmes, as well as those between the Headquarters and field levels, is seen as one of the contributors to the ineffectiveness of effective peacebuilding. The UN has fallen short in its efforts to “Deliver as One,” and has continued to work in silos[33].

The AGE report also cited the insufficient institutional focus on conflict prevention, as well as a lack of women’s political participation. It also highlighted the positioning of the UN with regard to national leaders, noting that it is counter-productive for the UN to align itself to leaders “whose strategies and interests proved not to be aligned with peacebuilding,” at the expense of engaging with “broader domestic constituencies”[34].

Another factor that can inhibit the effectiveness of preventive diplomacy is the number of parties involved, each having its own diverse agenda. According to the UN/World Bank report, “the breadth and complexity of the conflict [in Yemen, for example] and the multiplicity of actors involved have defied long-standing efforts to secure lasting peace”[35].



6. Effective UN Preventive Diplomacy

6.1. Understanding Escalation

Nathan et al point out that, in order to succeed, “preventive diplomacy actors must have a very good understanding of the conflict parties’ perspectives on violent and non-violent courses of action”[36]. They add that the context in which these actors operate (power structures, economic relations, social norms and ideology) impacts their behavior, and that violence is a chosen response to the prevailing social, economic and political conditions.

The authors describe the elements of an escalatory dynamic: 1) action-reaction; 2) growing polarization; 3) intense mistrust; 4) inflammatory threats; and 5) mutual demonization, which also influence the choice of the actors to take a path towards violence. Preventive diplomacy aims to assist parties to exit the escalatory dynamic and to “re-calibrate their cost-benefit analysis in favor of a non-violent course of action”[37].

6.2. Prerequisites for Prevention

In their paper on conflict prevention, Day and Fong[38] identify five variables as being necessary for effective preventive diplomacy: 1) consent of the conflict actors; 2) timing of the diplomatic intervention; 3) the situational knowledge and associated relationships; 4) leverage available to be applied on the conflict actors; and 5) sustainability.

UN preventive diplomacy requires the “willingness of the parties to a dispute to permit the UN to play a part in resolving it,” otherwise known as their consent. Where this consent is not readily achieved, as a result of sovereignty concerns or other factors, the UN can continue to gradually work towards generating it, slowly “building the trust and the space to engage”[39].

Regarding timing of the diplomatic intervention, the authors make use of a model developed by Gowan on the stages of escalation from pre-conflict to conflict. These comprise: “1) ‘latent



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tension,' in which potential causes of conflict have been identified; 2) 'rising tension,' in which conflict is emerging and violence is spreading; 3) 'decision points,' when actors are on the verge of deciding for or against violence; and 4) 'post-decision points,' when actors have entered into either all-out violent conflict or fragile settlements"[40]. They suggest that preventive diplomacy has a unique potential for greater impact in stages two and three.

Day and Fong also point to the importance of an on-the-ground presence, mediator credibility, frank communication and engagement with all the parties, as critical to enhancing local knowledge and building the necessary relationships required for successful preventive diplomacy. The UN regional offices, Resident Coordinators and the UN Country Teams have been important platforms for ensuring the on-the-ground presence. Given the personal nature of diplomacy, mediators with situational knowledge and existing relationships with the actors prior to the crisis will have greater credibility[41]. The mediators should also possess very good communication, coordination and persuasion skills, and should adopt a "non-threatening, discreet posture, avoiding public criticism of the conflict parties"[42]. However, their pre-existing relationships with the parties can be used to facilitate candid exchanges with the actors on the options available as a result of their actions. Also, as the authors also point out, "Diplomacy can no longer afford to be state- or elite-centric, it must also account for a broader range of actors who can influence the trajectory of a conflict"[43].

With regard to leverage, the authors suggest that this is less of a requirement when parties are "looking for a [peaceful] way out"[44], in which case "discreet good offices" may suffice. However, if "their motivations . . . are pulling them towards violent conflict rather than away from it," then forms of leverage - including "incentives and inducements" all the way to coercive measures, such as "sanctions, threats of prosecution by the International Criminal Court, or military intervention - may be applied. However, caution is advised in the application of coercive measures, as there is an accompanying risk of unexpected negative consequences, including escalation of the conflict. Instead, others suggest that "the deployment of UN resources and technical expertise can constitute soft leverage in support of UN diplomacy"[45]. In this regard, examples of possible entry points could be through support to elections, or UN development projects[46].



The last variable, sustainability, is critical in avoiding the outbreak or recurrence of violent conflict. The authors stress that “preventive diplomacy . . . should remain largely focused on agency and the core tasks of persuasion and political deal-making. At the same time these efforts should be linked to longer-term arrangements that can engage society more broadly in addressing underlying drivers such as inequality, relative poverty and exclusion”[47]. They suggest that 1) maintaining a supportive political constellation of regional and international actors; 2) achieving the buy-in of all conflict-affected parties; and 3) linking the political process with development, and thus “including development actors in crafting a diplomatic engagement and vice-versa, involving the political pillar more systematically in longer-term development planning”[48].

7. Conclusion

Today's conflicts are complex, with a multiplicity of actors, each with competing interests and claims to legitimacy. Nor is it a straightforward affair of one traditional state army against another, fighting across borders. Today's conflicts are largely intrastate, and in some cases, involve proxies, funded and equipped by governments with their own agendas. However, regardless of its nature and form, the common thread is the adverse and debilitating consequences of violent conflict on the societies directly affected. And it is here that the UN, as well as other regional and sub-regional organizations have a responsibility to prevent the outbreak of violent conflict.

We have seen that there are several factors that work against the UN's preventive diplomacy effectiveness. These include Security Council disunity and political interests, UN system fragmentation, lack of inclusivity in the interventions, particularly of women and affected constituencies. At the same time, there have been successes in places where these obstacles have been overcome like Burkina Faso, Kenya, Kyrgyzstan, Malawi and Yemen. However, these achievements have not prevented the recurrence of violence in Kenya in the 2017 elections or in the civil war that continues in Yemen. Conflicts are also ongoing in Libya, South Sudan and Syria, which indicate that there is still a lot of work to be done by the UN and other preventive diplomacy actors.



The good news is that the UN continues to evaluate its performance in this area, and lessons continue to be learned. The adoption of the Sustainable Development Goals, as well as the recent restructuring of the UN Secretariat Departments of Political and Peacebuilding Affairs, and Peace Operations, are signs that the Organization is slowly moving away from the fragmentation that has plagued its existence and towards a unified approach across its peace and security, human rights and development pillars. Action must now speak louder than words, because it is what those most affected by conflict are demanding.

Conflict of Interest

The author declares no conflict of interest.

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