Reconciling CBDR with non-discrimination: A fundamental requirement for ICAO's global MBM success

23 Sept 2014 – Greenhouse gas (GHG) emissions from international aviation will continue to remain one of the sector's biggest and most complex challenges. ICAO Member States decided in 2013 to develop a global market-based measure (MBM) to address this growing concern (ICAO Assembly Resolution A38-18 para 18). Although the organisation has identified potential options for this scheme, and in fact has established a road map to achieve the objective, a number of issues remain unresolved. Perhaps one of the most complex remains the articulation of the UNFCCC's Common But Differentiated Responsibilities (CBDR) principle with ICAO's non-discrimination. The reconciliation of these principles should constitute a fundamental objective in designing the global MBM for international civil aviation, *writes Alejandro Piera (right)*.

One of the reasons why a concrete measure to reduce or limit GHG emissions has not yet been established is that the sector has only timidly advanced proposals to tackle this issue. Given its highly political nature, the airline industry, through IATA, has left it for States to decide. Similarly, ICAO has hitherto only scratched the surface of the matter.

Although the 38th Assembly decided that "special circumstances and respective capabilities of developing countries could be accommodated through…exemptions from, or phased implementation," the concept has yet to be articulated. By mapping out an incremental, route-based global MBM, this article provides certain criteria to select routes to be covered under the scheme and at what stage.

Route-based/Phase-in approach

In order to address equity issues, the global MBM scheme for international aviation could be designed in such a way that it gradually covers specific international routes. These routes may be phased into the scheme in accordance with a specified set of criteria. This is what the literature refers to as 'incrementalism'. In light of the fact that one of ICAO's aspirational goals is the attainment of carbon neutral growth (CNG) from 2020 onward, the global MBM scheme could have three phases: 2020 to 2023, 2024 to 2026 and 2027 to 2030.

Although in theory each phase could be longer (e.g. five years), this may jeopardise the likelihood of achieving the aspirational goal, as aircraft operators will join the system at a later stage. If this is the case, it may be more difficult to obtain a critical mass of participants in order to capture a significant percentage of GHG emissions from international aviation. This may necessitate a reassessment of ICAO's aspirational goals.

Efforts to introduce differentiation risk market distortion and, as a basic principle, aircraft operators flying on the same route – whether they are from developed or developing States – will be subjected to the same rules. The scheme will only apply where the points of origin and destination of both routes are subject to the same phase. If not, the scheme would not apply to the route.

By way of illustration, let us assume that during the first phase of the scheme, only routes to and from Canada and to and from Europe are covered. This will mean that Air Canada flying the route Montreal-Frankfurt-Montreal and Lufthansa flying the same route in reverse will both be subject to the global MBM scheme. Yet this will also mean the scheme would be applicable to Air India serving the route Montreal-Frankfurt-Delhi but only with respect to the Montreal-Frankfurt segment. The fact that routes to and from Canada are part of the first phase of the scheme would not mean all of Air Canada's routes will be covered. Again, both points of origin and destination must be part of the same phase. Therefore, Air Canada's flight to Buenos Aires will not be subject to the scheme as routes to and from Argentina would not be covered under the first phase of the regime.

The key question with this approach is what criteria determine which routes will be covered and when. I advance some ideas on potential options to phase routes into the different phases of the scheme.

Phasing in with a UNFCCC flavour

Under this option, from 2020 to 2023, the scheme will first cover routes to and from Australia, Canada, New Zealand, Japan, the Russian Federation, the United States and the 44 Member States of the European Civil Aviation Conference (ECAC). This will capture about 50 States that today are responsible for roughly 57% of GHG emissions from international aviation (Figure 1). (In the absence of accurate data being available, I have made international aviation emissions proportional to a State's total international RTK activity and used ICAO's 2012 RTK ranking.)

The justification for including these States in the first stage is twofold. First, it follows the UNFCCC principle that developed States should take the lead in addressing GHG emissions. These States bear a historical responsibility for past emissions. Most of these States are Annex 1 parties for the purpose of the UNFCCC. Second, the bulk of ECAC States are included in this phase because they have been the early champions of aviation and climate change issues. It is also expected that the European constituency will demand that all routes to and from Europe should be covered in the first phase of the scheme.

I use regional market shares in order to determine which routes would be phased into the scheme during the second and third phases. With 27 and 13 per cent of international traffic respectively, routes to and from Asia Pacific and the Middle East will be phased into the scheme during the second stage (i.e. between 2024 and 2026). This will probably capture an additional 37% of total emissions from international aviation. At this stage, the scheme's overall coverage will be approximately 94% of the sector's international emissions (Figure 2). Routes to and from major aviation powerhouses such as China, UAE, Singapore, Qatar, Korea, Malaysia, Indonesia, India and Saudi Arabia will be added to the scheme.

Finally, in the third phase of the scheme (i.e. from 2027 to 2030), routes to and from Latin America and the Caribbean and the African regions, whose international traffic market share is only 4 and 3 per cent respectively, will be phased into the scheme (Figure 3). This will ensure that routes to and from Africa will only join the scheme at a late stage. During the last two ICAO Assemblies, by strongly pushing the inclusion of a *de minimis* threshold, African States made it abundantly clear that they should not be included in any global or regional MBM.

Figure 1:

Phase 1
Period: 2020-2023
International aviation GHG emissions coverage: 57%
States covered: Australia, Canada, New Zealand, Japan, Russian Federation, United States & Member States of the European Civil Aviation Conference (ECAC)

Figure 2:

Phase 2
Period: 2024-2026
International aviation GHG emissions coverage: 94%
States covered: States in Phase 1 plus Asia Pacific & Middle East (e.g. China, UAE, Singapore, Qatar, Korea, Malaysia, Indonesia, India & Saudi Arabia)

Figure 3:

Phase 3
Period: 2027-2030
International aviation GHG emissions coverage: 100%
States covered: States in Phases 1 & 2 plus Latin America/Caribbean & Africa

Arguably, phasing in routes to and from States on the basis of their market share of international aviation traffic follows a UNFCCC-type differentiation between developed and developing States. It does, however, present some obvious problems. While Latin America and Africa have almost insignificant traffic market shares, they are home to some of the world's most prosperous and fastest-growing airlines. It does not seem plausible to shield Brazilian/Chilean airline conglomerate LATAM, Ethiopian Airlines and South African Airways from carbon responsibility. While Qatar Airways will join the scheme from 2024 onward, LATAM, Ethiopian Airlines, and South African Airways would only form part of it in 2027. Clearly, these carriers are in a much better position to address climate change issues than Air Namibia or Uruguay's BQB Airlines. Some form of market distortions may likely arise.

The obvious criticism of this option is that by first phasing in routes to and from developed States, the system incorporates, albeit temporarily, a camouflaged version of the CBDR principle. In essence, the option distinguishes routes to and from developed and developing countries. This could make it difficult for some developed States to accept the proposal. The counter argument is that unlike in the UNFCCC context, the differentiation would not be perpetual. It would only be intended to provide temporary headroom. Six years after its adoption, the scheme will cover almost all the relevant routes to and from developed and developing countries alike.

Phasing in on the basis of international aviation activity

Another option is to move completely away from differentiating routes on the basis of whether they belong to a developed or developing country and to exclusively take into account international aviation activity. As an alternative proposal, the scheme could phase in routes on the basis of levels of international aviation activity as measured by ICAO in RTKs. For simplicity, all ECAC Member States will be grouped together. From 2020 to 2023, the first phase of the scheme will cover all routes to and from ECAC Member States and the top 10 States ranked by RTKs. In addition to the European States, this will capture major aviation players such as the United States, China, UAE, Korea, Singapore, Japan, Qatar, Russian Federation, Australia and Canada. Using this option, 54 States will be held accountable for roughly 80.5% of international aviation emissions (Figure 4).

From 2024 to 2026, the second phase will include routes to and from the following 10 non-EU States ranked by RTKs: Thailand, Malaysia, India, Saudi Arabia, Brazil, South Africa, New Zealand, Chile, Ethiopia and the Philippines. With the inclusion of these States, the scheme's coverage would increase to roughly 90% of international aviation emissions (Figure 5). Finally, from 2027 to 2030, the remaining States will be phased in (Figure 6).

This approach ensures that routes to and from major aviation States are phased into the scheme at an early stage in the process. In comparison with phase 1 of the first option, there is a significant increase in the coverage of GHG emissions under this option (80 vis-à-vis 57 per cent). Moreover, market distortions could be reduced even further if phases 1 and 2 are merged into one phase. Since a State's level of international aviation activity would be the only factor that matters, none of the UNFCCC-related considerations (e.g. historical responsibilities) would be relevant to the determination of which States should be phased into the scheme under this option. In practice, this will mean that routes to and from major emitters will be covered first under the scheme.

Figure 4:

Phase 1
Period: 2020-2023
International aviation GHG emissions coverage: 80.5%
States covered: ECAC Member States plus the top 10 States ranked by international RTKs (Europe + US, China, UAE, Korea, Singapore, Japan, Qatar, Russian Federation, Australia & Canada)

Figure 5:

Phase 2
Period: 2024-2026
International aviation GHG emissions coverage: 90%
States covered: States in Phase 1 plus the next 10 States ranked by international RTKs (Thailand, Malaysia, India, Saudi Arabia, Brazil, South Africa, New Zealand, Chile, Ethiopia and the Philippines)

Figure 6:

Phase 3
Period: 2027-2030
International aviation GHG emissions coverage: 100%
States covered: States in Phases 1 & 2 plus all other States

A mixed approach to phasing in

My third option blends elements present from the first two options. As per the first option, from 2020 to 2023, the scheme will capture routes to and from Australia, Canada, New Zealand, Japan, the Russian Federation, the United States and ECAC Member States, and thereby cover 57% of emissions from international civil aviation (Figure 7). The inclusion of these States in the first phase of the scheme would amount to recognition of their responsibility for historical emissions forming part of the overall GHG contribution to climate change.

For the subsequent phases, the approach would be different. Instead of grouping States according to the regions where they are geographically located or classifying them as developed or developing countries, this option will phase in States in line with their respective levels of aviation activity. Thus, from 2024 to 2026, the second phase will include routes to and from States ranking in the top 20 RTK list that did not join the system in the earlier period. Capturing

countries such as China, UAE, Korea, Singapore, Qatar, Thailand, Malaysia, India, Saudi Arabia, Brazil, South Africa, Chile, Ethiopia, Israel, the Philippines, Indonesia, Colombia, Egypt, Mexico and Panama, this will cover an additional 37.8% of GHG emissions from international aviation, totaling 94.8% (Figure 8).

Finally, from 2027 to 2030, the remaining States will join the system. Again, market distortions may be reduced if phases 1 and 2 are merged (Figure 9).

Figure 7:

Phase 1
Period: 2020-2023
International aviation GHG emissions coverage: 57%
States covered: Australia, Canada, New Zealand, Japan, Russian Federation, United States & ECAC Member States

Figure 8:

Phase 2
Period: 2024-2026
International aviation GHG emissions coverage: 94.8%
States covered: States in Phase 1 plus top 20 States ranked by international RTKs (China, UAE, Korea, Singapore, Qatar, Thailand, Malaysia, India, Saudi Arabia, Brazil, South Africa, Chile, Ethiopia, Israel, Philippines, Indonesia, Colombia, Egypt, Mexico & Panama)

Figure 9:

Phase 3
Period: 2027-2030
International aviation GHG emissions coverage: 100%
States covered: States in Phases 1 & 2 plus all other States

The value of voluntary commitments

While binding emission reduction commitments are preferable, the reality is that for a variety of reasons not all States are in a position to accept them. One of the salient characteristics of the architectural design of the international climate change regime is that States are increasingly being encouraged to take voluntary measures to address climate change. For instance, the UNFCCC has established the concept of nationally appropriate mitigation actions (NAMAs). Various States and groups of States have voluntarily pledged to contribute funds for climate change mitigation and adaptation. The design of ICAO's global MBM should also allow States to make voluntary commitments.

In the context of a route-based system, a State included in one of the later stages of the scheme may voluntarily decide to phase in routes to and from its territory during an earlier phase (e.g. a State deciding to join the scheme in phase 1 when the system only requires it to do so in phase 2). Voluntary commitments should be seriously explored. Six developing countries – UAE, Republic of Korea, Singapore, Qatar, Thailand, and Malaysia – who have demonstrated a rather progressive attitude toward aviation and climate change issues are cumulatively responsible for 21.6% of global GHG emissions from international aviation. Including routes to and from these States in the global MBM scheme at an earlier stage could significantly boost the scheme's scope of coverage.

The obvious argument against this proposition is that there is no apparent incentive for these States to do so. Why would a State expose its aircraft operators to a carbon price when any rational actor would delay it as long as possible? Although this is a valid point, it ignores the fact that these States will also face a serious reputational cost. All of these States host sophisticated, fast-growing, and, in most cases, profitable airlines. It is no secret these airlines provide far superior services and their overall performance is significantly higher than that of North American and European air carriers. In this context, delaying the inclusion of routes to and from these countries may be perceived as providing an unfair advantage to these carriers, which have been attacked on similar grounds in connection with other than non-climate change related issues.

In the EU ETS saga, these carriers have already been accused of profiting from carbon leakage. These States may consider showing leadership by voluntarily phasing in routes to and from their territories during the earlier phases of the global MBM scheme, putting this criticism to rest.

Potential main objections

Implementing a global MBM scheme through a route-based approach in different phases may face two main objections. First, although the system is designed on the premise that aircraft operators serving the same route are subject to the same carbon rules, it does not completely eliminate the possibility of market distortions. This is particularly so if one considers origin-to-destination passenger itineraries.

To illustrate, let us consider the following example. Again, let us assume that routes to and from Canada and Europe are covered in the first phase of the scheme. A passenger is travelling from Toronto to Delhi. He is offered two alternatives: (i) Toronto-Delhi via Frankfurt on Air Canada/Lufthansa and (ii) Toronto-Delhi via Dubai on Emirates. The segment Toronto-Frankfurt is subject to the global MBM, whereas the second travel option is completely exempted, at least for the time being. The passenger may find that Air Canada and Lufthansa would attempt to pass on the cost of participating in the global MBM to him, whereas it is simply absent on the Emirates ticket price. Depending on the actual price of carbon, this cost may provide an incentive to pick one airline over another. The fact that routes to and from the UAE are not covered in the first phase of the scheme creates a perception that an unfair advantage is given to Emirates.

Although there is some truth in this argument, for a number of reasons, market distortions are already present in international aviation. For instance, Asian carriers enjoy significantly lower labour costs than many European airlines. Similarly, an airline from a landlocked/non-oil-producing country probably bears much higher fuel costs as compared to those from the Gulf region. These are just some examples. Since the infancy of international aviation, aircraft operators have experienced different costs in different parts of the world. This is a natural consequence of operating in a global environment. A global MBM implemented on the basis of a route-based approach in different phases will not change this trend, but nor will it aggravate it.

Although market distortions exist in practice, a different question is whether the design of the global MBM scheme should induce them. Clearly, the objective should be to reduce market distortions. It is, however, simply naïve to expect they could be completely eliminated. The fact the last two ICAO Assemblies have recognised that minimising market distortions should be a principle when designing MBMs, implicitly acknowledges that they do exist. The probability some market distortion may occur should not prevent the adoption of a fundamental element of the global MBM scheme for international aviation. The cost of participation in the scheme is expected to have only a marginal effect on aircraft operators.

The second criticism concerns the political dimension. Regardless of the technical justification, differentiating and phasing routes into the scheme involve complex political compromises that pose challenges to adopting and implementing the scheme. Although one cannot help but accept that these elements add to the complexity of the scheme, it is also unrealistic to expect from day one the scheme will cover all aircraft operators on all routes. It is precisely because of the inherently political nature of aviation and climate change issues that some form of temporary differentiation is required. CBDR must be reconciled with non-discrimination in a manner compatible with the international aviation environment. This is necessary to enhance political acceptance and ensure that the system is widely implemented. Despite the difficulties, the route-based/phase-in approach is one way to achieve this objective.

It is true that adopting any of the options will require a political decision. Given that potential implications go well beyond the aviation domain, compromises may be expected. Yet these are necessary if the global MBM is expected to be operational and, more importantly, to have a meaningful effect in limiting GHG emissions from international aviation.

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