

■ An ABS survey for botanic gardens: how prepared are we for new rules?

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Abstract

As global custodians of plant genetic material, botanic gardens are affected by the provisions on access to genetic resources and benefit-sharing (ABS) of the Convention on Biological Diversity (CBD) and the new Nagoya Protocol on ABS, and the resulting national laws and regulations. To assess botanic gardens' awareness of ABS and preparedness for post-Nagoya compliance measures (e.g. increased monitoring of material), we distributed an online Qualtrics questionnaire via BGCI and the American Public Gardens Association. We obtained data on institutions' sizes, locations and breadth of collection and research activities; recognition of the CBD and ABS; collections policies and the extent to which gardens track material. Representatives of 222 gardens from 46 countries responded. Many are not yet familiar with ABS or their CBD national focal points. The transfer of material is common, but while many gardens record new arrivals, a concerning proportion do not track material as it leaves, use material transfer agreements, or link permits/restrictions to collections. It appears that many gardens are not yet prepared for increased monitoring. This survey demonstrates a need for better communication with relevant authorities and for ABS capacity-building, to enable gardens to comply with new legislation and safeguard their role in conservation.

Keywords

Access and benefit-sharing (ABS), awareness, Convention on Biological Diversity (CBD), Nagoya Protocol, material transfer agreements, permits, policy, survey, tracking

Botanic gardens are global custodians of plants, and plants, whether living in a garden or dead on a herbarium sheet, and contain genetic material that can potentially be used in a multiplicity of ways. Thus botanic gardens are affected by the provisions on access to genetic resources and benefit-sharing (ABS) of the Convention on Biological Diversity (CBD) and the Nagoya Protocol on ABS, and the resulting complex of national laws and regulations. The Nagoya Protocol is a supplementary agreement under the CBD that sets out more detailed ABS obligations and measures, adopted by CBD Parties in 2010 and expected to come into force in 2014. The Protocol includes new measures to improve compliance with countries' ABS laws and providers' terms, with a greater emphasis on monitoring transfer and use of material – although it also urges countries to design simpler ABS measures for non-commercial research and encourages the use of voluntary codes of conduct and best practices (see Articles 17, 12, 20 of the Nagoya Protocol, SCBD 2014). ABS issues can be very complex and contentious, but awareness of the issues is crucial, so that gardens can build trust by having good practices and can participate in the debates – and ideally can also participate in the development of measures that are realistically feasible and that enable biodiversity conservation and sustainable use.

To assess the current level of botanic gardens' awareness of ABS and preparedness for post-Nagoya measures, we conducted a global survey in 2012, using an online Qualtrics questionnaire (Qualtrics Research Suite, Version 12.018), and distributed it via the Botanic Garden Conservation International (BGCI) website and the American Public Gardens Association (APGA) mailing list. The BGCI survey was available in English, French, Spanish and Mandarin.

The anonymised survey collected information on (a) gardens' location, governance structure, size, network membership, and range of collections/research activities, including international involvement; (b) respondents' self-declared awareness of ABS and main sources of ABS

information; (c) indicators of practical ABS readiness and implementation, such as whether the garden has a collections policy that covers ABS and if it tracks material and keeps permit terms linked with material. Detail on statistical analyses performed is not included here, although statistically significant differences are indicated.

The survey produced responses from 222 botanic gardens in 46 countries, after duplicate institutional responses; non-botanic gardens were removed (to keep the survey's focus on documented collections that are used for research, conservation and/or education as well as display). Gardens were assigned to one of three regional groups:

- 'Global South' (from the Organisation for Economic Co-operation and Development's list of aid-receiving countries; GS; 37 gardens; OECD 2014),
- 'Global North' (GN; 88 gardens), and
- 'US' (because the USA is not a CBD party; 97 gardens) (Figure 1).

Unsurprisingly, given the survey's distribution via BGCI and APGA, survey respondents were disproportionately likely to be BGCI and/or (for US gardens) APGA members. The majority of GN and GS respondents were BGCI members (63%, 78%), which contrasts with the 25% of Global South botanic gardens listed in BGCI's GardenSearch database that are BGCI members. The majority of GN and US respondent gardens were members of national networks (83%, 92%), but fewer GS gardens were in national networks (46%) (Figure 2).

Self-declared familiarity with the CBD, ABS and the Nagoya Protocol was generally low across regions, but varied significantly among them. 43% of US respondents had never heard of ABS, and 56% had never heard of the Nagoya Protocol, while among gardens in both GN and GS regions, 14% had never heard of ABS, and 20% (GN) and 22% (GS) had never heard of the Nagoya Protocol. Across all regions, gardens that had international involvement (in research/collection/exchange) had higher levels of familiarity than gardens not involved in international work. More respondents declared higher familiarity with the CBD than with ABS, and gardens were least familiar with the Nagoya Protocol (Figure 3).

Gardens were more likely to find out about ABS via national networks (49%) and BGCI (50%) rather than via their country's CBD or ABS national focal point (15%) or other colleagues (32%), though there was significant regional variation as to important sources of information: GS gardens were more likely to identify government CBD/ABS national focal points (38%) as sources, and less likely to identify national networks (28%). CBD/ABS national focal points played a minor role for US (especially – only 5%) and also GN gardens, with 'other colleagues' identified more often as a source of information (Figure 4). Few respondents had ever knowingly contacted their CBD or ABS national focal point.

Most respondents, across regions, declared that they had a plant collection policy, though internationally-involved gardens were somewhat more likely to have one. However, many gardens' policies do not yet address ABS: only 39% of surveyed gardens had an ABS policy or were revising their current policy to cover ABS. US gardens were much less likely address to ABS in their collections policy (20%), and GS and GN gardens are more likely to do so (59%, 52%). Across regions, international involvement is also a significant factor as to whether policies address ABS; unsurprisingly, internationally-involved gardens are much more likely to be addressing ABS in their policies (52% are doing so, compared to 31% of gardens without international involvement) (Figure 5).

Respondents indicated that a wide range of benefits is shared with biodiversity providers, with most emphasis across all regions on transfer of taxonomic and horticultural knowledge (Figure 6). GS gardens reported higher levels of benefit-sharing than GN or US gardens across all categories

but direct financial support; internationally-involved gardens also reported higher levels of benefit-sharing across most categories, except for transfer of horticultural knowledge and habitat restoration.

Gardens predominantly supply material to other gardens and universities, but some (especially US gardens) also supply to nurseries or to the public via plant sales, or supply to government agencies (especially GS gardens) (Figure 7). Internationally-involved gardens appeared more likely to supply material than gardens without international involvement across all categories, especially to other gardens, universities and government agencies (and to a much lesser extent, other commercial sources); there was little difference regarding plant sales.

Across regions and levels of international involvement, most gardens (88%) track material when it first arrives (internationally-involved gardens are significantly more likely to do so, at 94%) (Figure 8), but far fewer track transfers to third parties – overall, 53%. Gardens with international involvement were significantly more likely to track third party transfer, though 22% of such gardens still do not track (Figure 9). Material Transfer Agreements (MTAs) are a means by which gardens can set out terms of use when they supply to third parties, and also have the potential to be a key record-keeping/tracking tool for the Nagoya Protocol, but currently a minority of surveyed gardens use them (42%). Regional differences are significant: US gardens are less likely (at 24%) to use MTAs to communicate terms than GN or GS gardens (56%, 58%). Internationally-involved gardens are significantly more likely to use MTAs, though still only 57% use them (Figure 10).

Keeping track of permits and restrictions is vital for ABS compliance. 60% of gardens either link permits or agreements to collection records, or at least note special terms or restrictions from such documents. Again, there are significant differences by region and international involvement: GS gardens are likely to keep permits directly linked to specimen records and least likely not to link permit terms (18%), while 26% of GN and US gardens do not link permit terms. 71% of internationally-involved gardens link permit terms, while 50% of gardens without international involvement do not (note that many countries do require permits for collecting by in-country gardens) (Figure 11).

Given the clear bias of this survey towards BGCI and network members, whom we might expect to be well-informed, except in the US given its CBD non-party status, this survey's results are rather sobering. Networks appear to be much more effective than government national focal points at informing gardens about ABS – though not in the Global South – but ABS policies are evidently lacking and tracking is limited across regions. Awareness may come through practical experience (internationally-involved gardens are more likely to need to have a policy, use MTAs, track transfer and link to permit terms), but our community should develop better ways to share such experience more widely (although without spreading misinformation) – including with our government representatives, especially while the CBD's own ABS Clearing House Mechanism is in its infancy. Policy frameworks (e.g. the Principles on ABS), codes of conduct (e.g. that of the International Plant Exchange Network; see BGCI ABS web pages), model documents and ABS-friendly documentation systems can play key roles if they are adaptable to the differing needs of diverse gardens and if gardens are aware of the need for them. This survey demonstrates a need for better communication with relevant CBD/ABS authorities and for ABS capacity-building to enable botanic gardens to comply with new legislation and safeguard their role in conservation.

References

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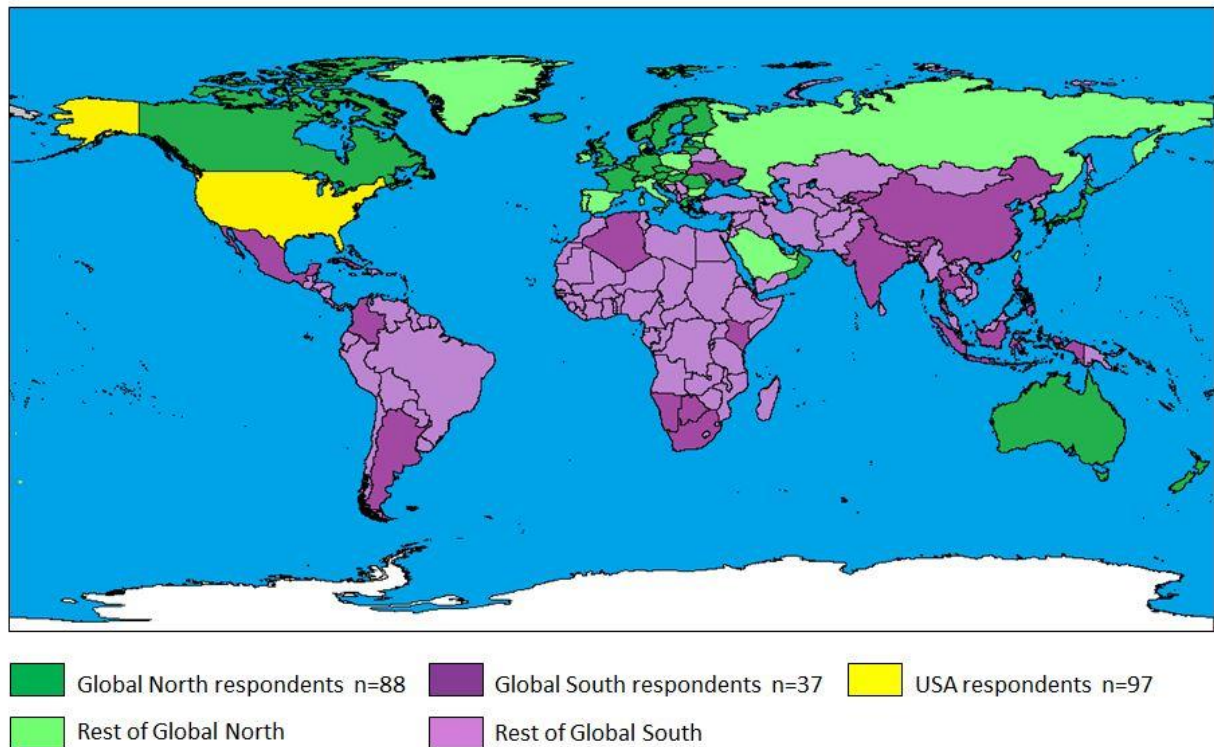


Figure 1: Regional divisions used in survey, using 2012 OECD Development Assistance Committee List of Overseas Development Assistance Recipients (from OECD, 2013)

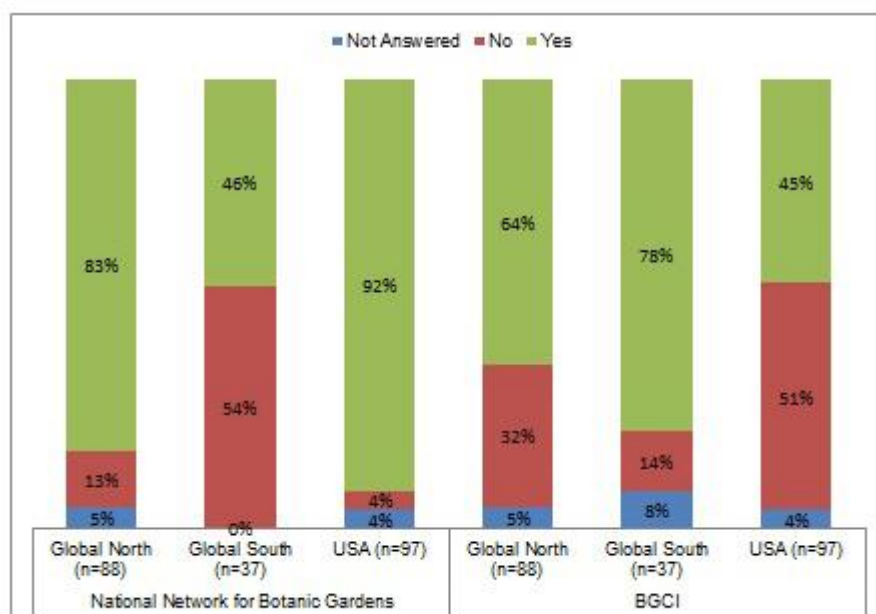


Figure 2: Membership in national botanic garden networks and Botanic Gardens Conservation International ('Is your institution a member of any of the following organisations?')

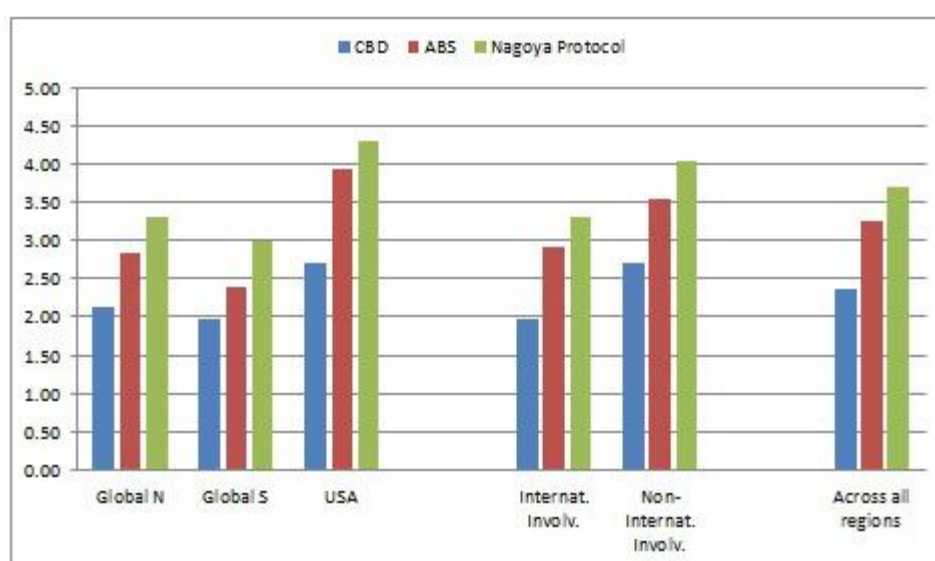


Figure 3: Self-declared familiarity with the CBD, ABS and the Nagoya Protocol ('In your opinion, how familiar are you with the following international treaties and issues?'): 1 = 'very familiar', 5 = 'never heard of it'; mean values by global region, international involvement and across all regions

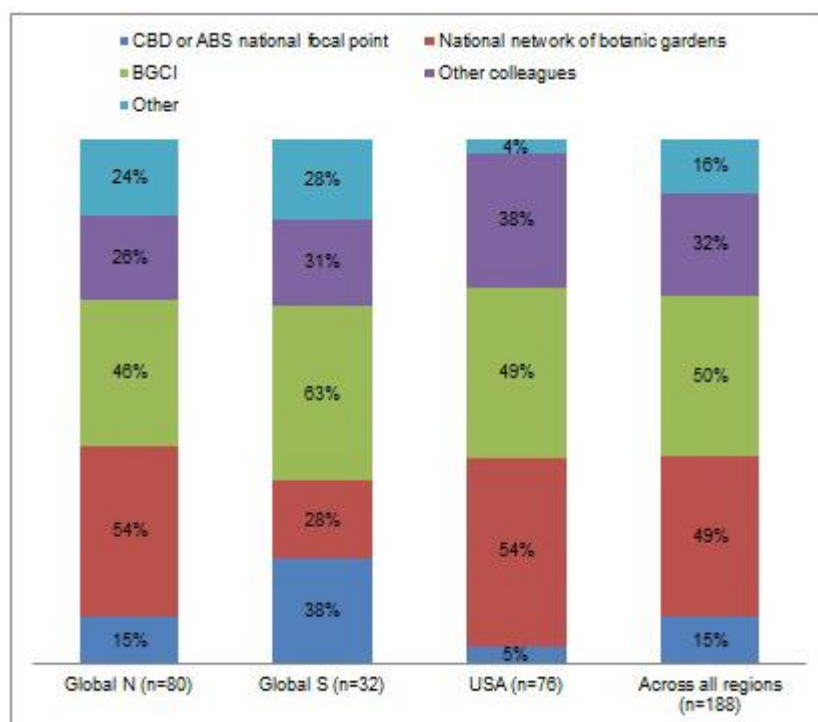


Figure 4: Sources of initial information about access and benefit-sharing ('How did you find out about CBD (ABS)?'), by region and across all regions

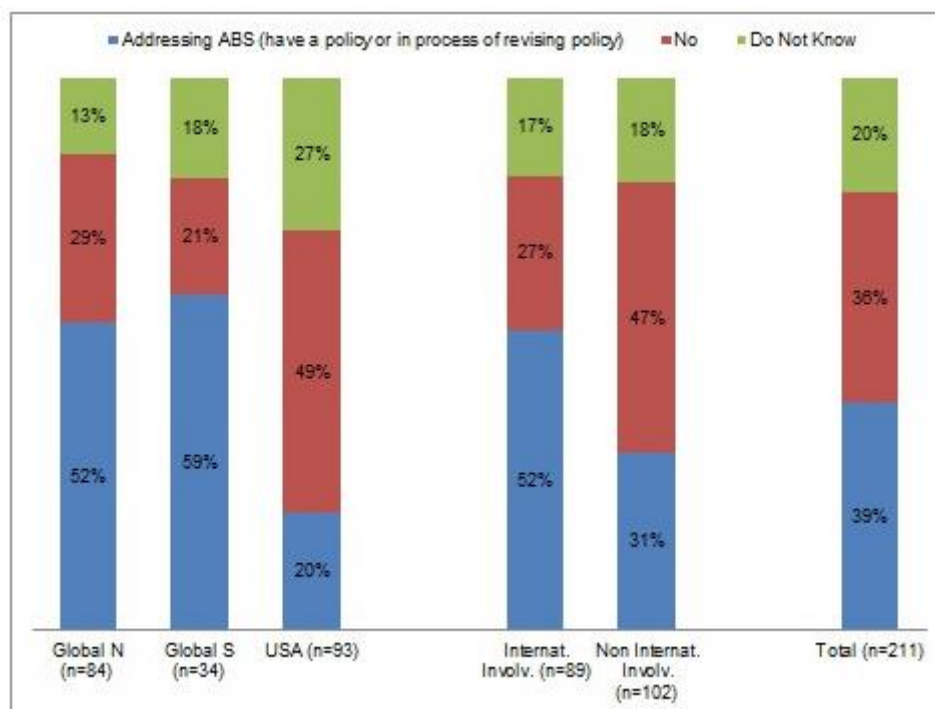


Figure 5: Inclusion of access and benefit-sharing in botanic garden policies ('Is ABS addressed in any of your institution's policies?'); by global region, international involvement and across all regions

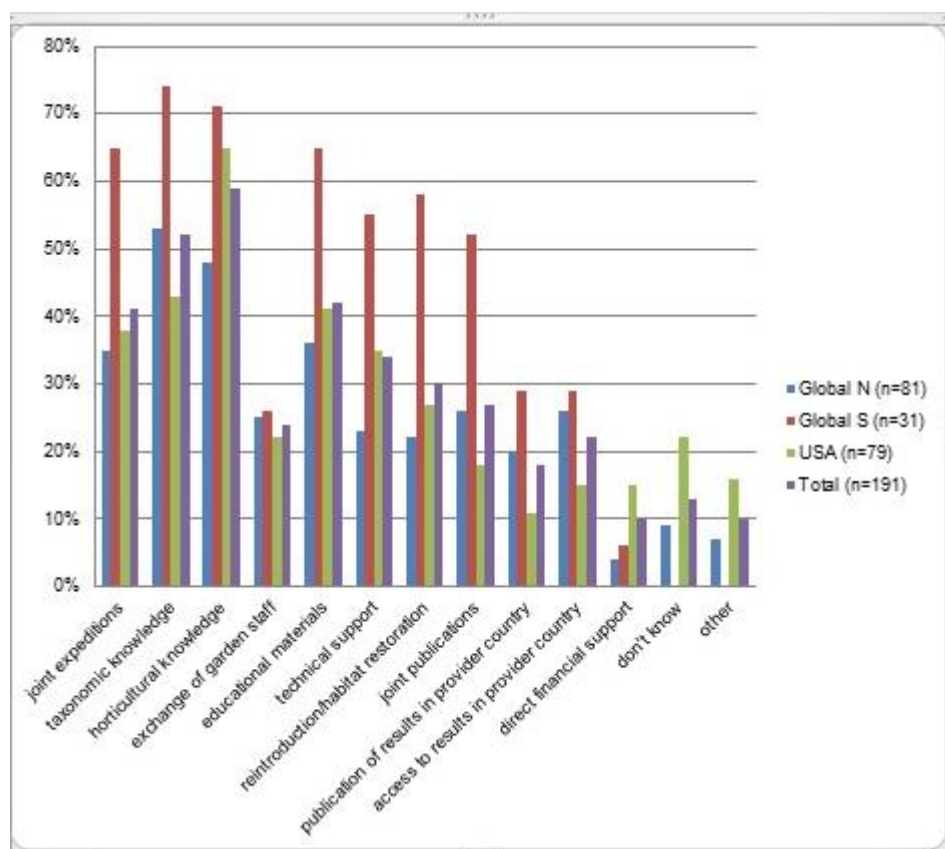


Figure 6: Benefit-sharing ('What kinds of benefits does your institution typically share with biodiversity providers? (check all that apply)'); percentage of gardens that answered benefit-sharing questions, by global region and across all regions

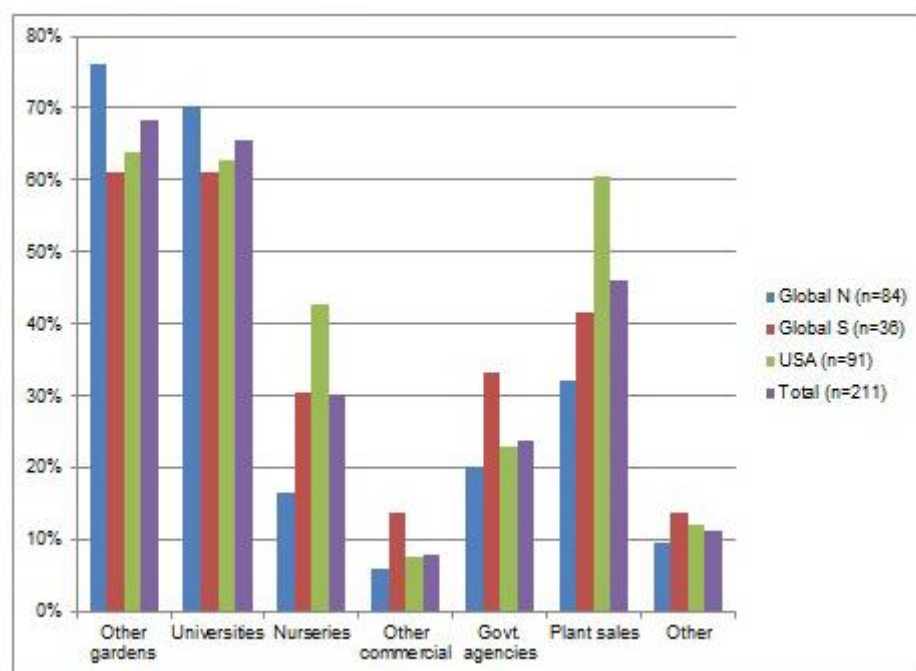


Figure 7: Supply of plant material to various third parties ('To which parties does your institution supply plants/specimens/samples?'); percentage of gardens that answered supply questions, by global region and across all regions

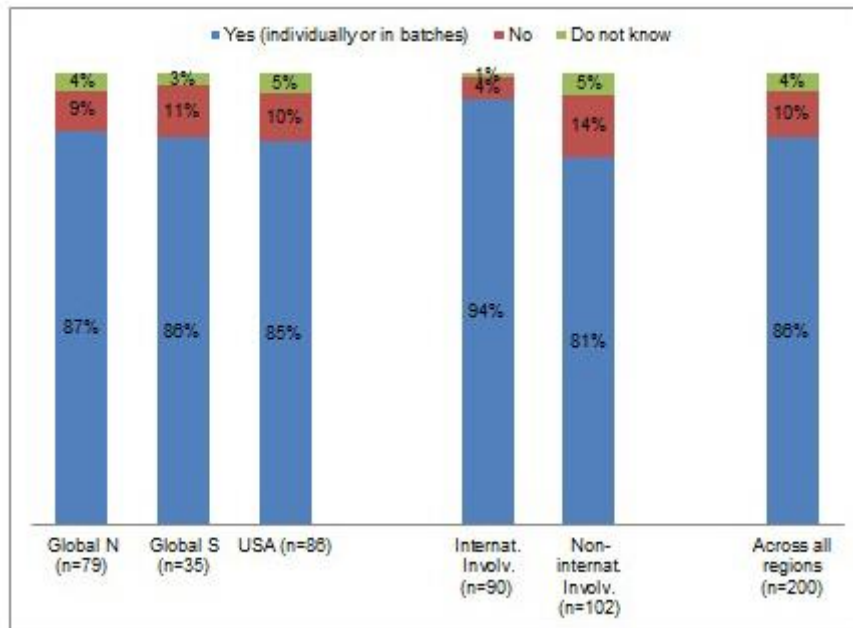


Figure 8: Tracking of plant material arriving at the garden ('With regard to permanent collections (and not seasonal displays): does your institution track plants/specimens/samples when they arrive at the garden?'); percentages by global

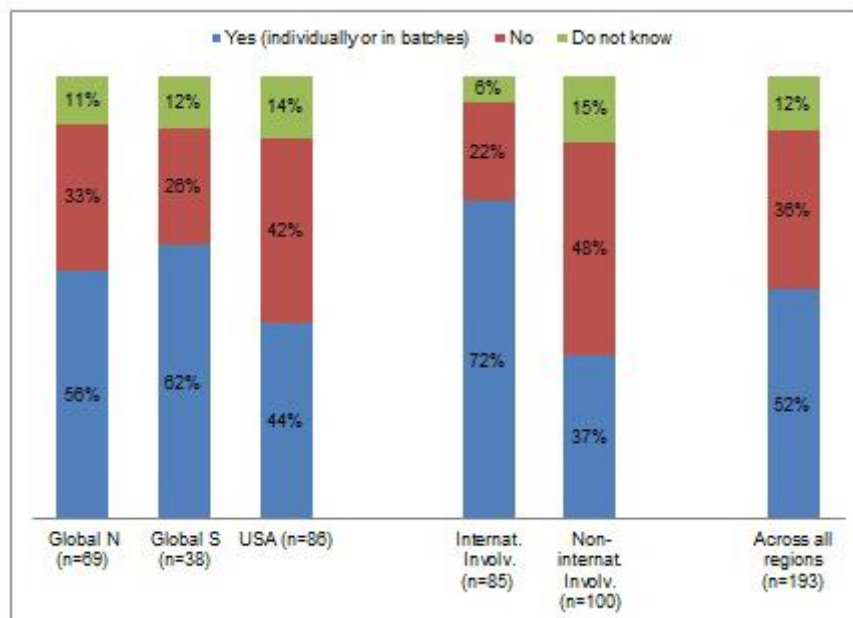


Figure 9: Tracking of plant material that is supplied to others ('With regard to permanent collections (and not seasonal displays): does your institution track plants/specimens/samples when they are transferred to third parties?'); percentages by global region, international involvement, and across all regions

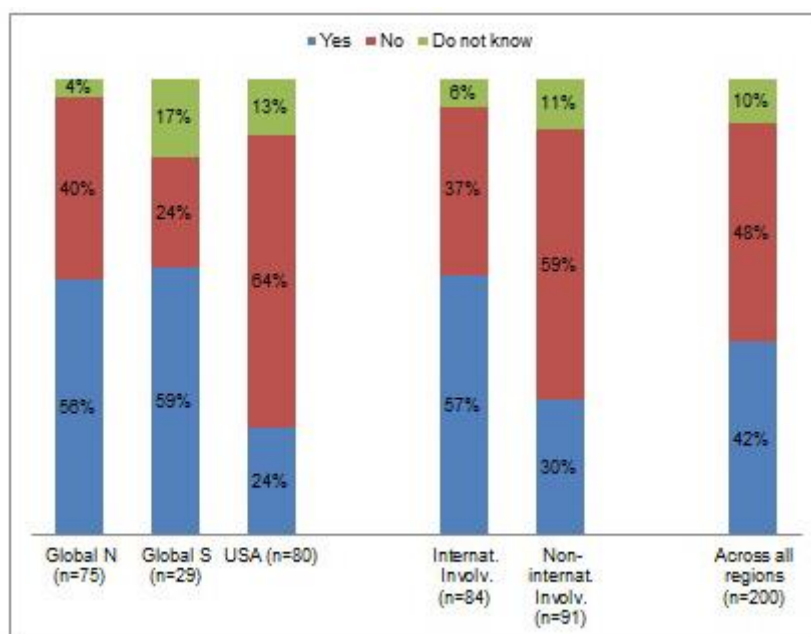


Figure 10: Use of Material Transfer Agreements by gardens ('Does your institution use MTAs to communicate terms of use for material?'); percentages by global region, international involvement and across all regions

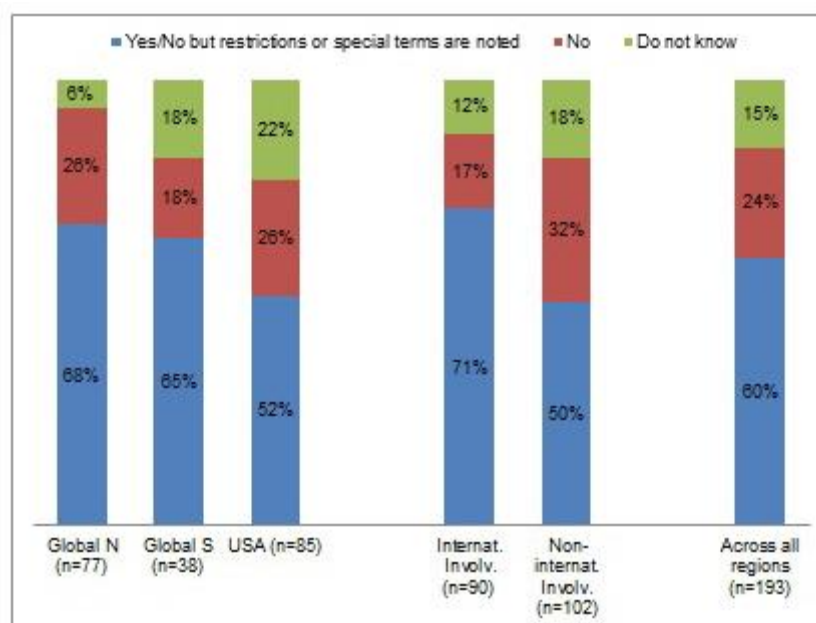


Figure 11: Linkage of permits/agreement terms to collection records ('Are collecting permits/benefit sharing agreements (or links to those documents) attached to collection records for appropriate accessions?'); percentages by global region, international involvement and across all regions