



Nanosciences, Nanotechnologies, Materials and New Production Technologies Deployment in Latin American Countries

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Make nanosafety a national research priority in Latin America

Latin American lags behind in research related to safety issues, risk assessment or environmental impacts of nanotechnologies. This is especially true in comparison with the situation in Europe. Researchers in Latin America strongly suggested that the development of new nanomaterials or nano-based technologies should be better accompanied by studies on potential and effective risks and impacts. First good practices and achievements in building nanosafety infrastructure and dialogues are becoming evident in some Latin American countries, above all Brazil.

Decision makers and stakeholders: consumers, workers, researchers, regulatory bodies, media, nanotechnology companies, consumer associations, trade unions.

Setting the scene

A bibliometric analysis of the Centre for Social Innovaton (ZSI) on the evolvement of publications and co-publications (EU-LAC) in the field of nanosafety showed that Latin America is truly lagging behind in research output related to nanosafety and that few countries within Latin America have visibility in the field. Up to 2015 almost 10.000 times, authors from the EU were involved in nanosafety publications and only 790 times, authors from LAC (including 476 Brazilians). Nevertheless, the analysis also shows a considerable increase in EU-LAC co-publications on nanosafety and a generally high level of trans-Atlantic collaboration in producing research output of LAC countries in this specific field.

Brazil is the most active Latin American country in research in environmental, health and safety aspects of nanomaterials and has several research groups and laboratories which are specialized in this field. In Mexico two research centres are internationally connected in nanosafety research.

In Argentina, Colombia, Chile and Cuba some nanosafety research is going on.

Risk governance of nanotechnologies has entered the political and policy agenda's in several Latin American countries including Brazil, Mexico, Uruguay and Argentina in recent years. This was reportedly in response to initiatives by international organisations including UNITAR and OECD, as well as governmental initiatives from the United States and the European Union. One recent milestone was the signing by the Brazilian federal government of a cooperation agreement with the European NANoREG project in 2015. The latter is well integrated with other projects in the European Nanosafety Cluster.

Civil society organisations from Latin America have actively engaged in global dialogue on risk governance for over ten years, in close collaboration with their international counterparts. Their influence on UN initiatives for governing nanotechnologies by SAICM and UNITAR has been demonstrated.

Furthering the topic

The United Nations Institute for Training and Research (UNITAR) offers training and capacity building to governments in developing countries on the development of national nanotechnology policies and programmes.



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The Cuban research community has developed its own nanosafety methods and is interested in establishing cooperation. Local market niches are emerging for services offering nanosafety evaluations for industry. LAC countries could engage in consultancy related to an online tool for managing occupational health and safety of chemicals.

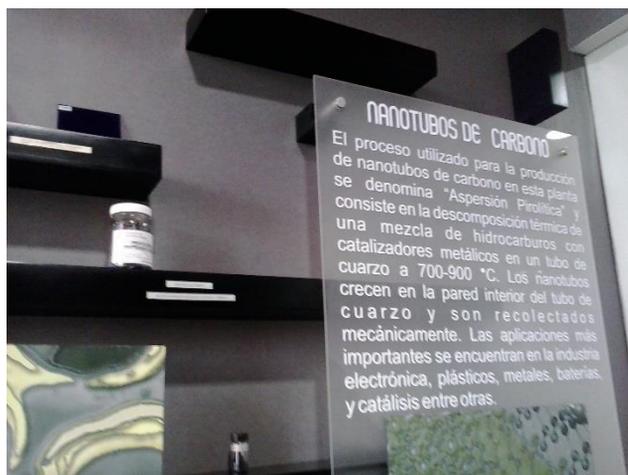


Figure1: Safety of Carbon Nanotubes is investigated globally. CIMAV in Monterrey can produce them.

Organising the intervention - Short term (2020)

By 2020, Researchers from Latin America should engage more actively in relevant international scientific associations including SETAC, IWA and GWRC and the European Nanosafety Cluster. The establishment of a Latin American Nanosafety Cluster linked to the European counterpart is recommended. An early milestone should be the establishment of a white paper on nanosafety in Latin America. Indicators for monitoring progress in this cluster are contribution to or adoption of international methods and standards on safety and risk assessment, the numbers of members per stakeholder group and the number of member countries.

Latin American governments could follow the example of Uruguay and adopt the UNITAR guidance for developing a national nanotechnology policy and programme with its offer of training. The WHO Healthy Workplaces Programme's guidelines on nanomaterials and workers' health could be disseminated to relevant authorities in LAC countries and to the general public. The EU may consider inviting other Latin American governments and research institutes besides Brazil to engage with NANOREG, doing justice to their needs and capacities.

Medium term (2020-2025)

In ten years, the strategic research agenda of the European Nanosafety Cluster foresees the finalisation of models predicting the release and fate in the environment of and exposure to nanomaterials.

The prediction of hazard evaluation should also be possible by then. Latin American research groups should contribute to this global research agenda.

Latin American governments could establish national working parties advising them on occupational health and safety issues of nanomaterials. This should contribute to increasing nanosafety at work and introducing occupational health and safety guidelines for nanomaterials. Indicators to monitor progress include numbers of organisations implementing nanosafety guidelines and of trainings on nanosafety.

Long term (2025-2030)

The achievement of the targets for nanosafety research are expected to allow for scientific guidance on risk evaluation and concern assessment within fifteen years. This is needed for international norm creation and national regulation of nanosafety. Latin American governments should actively engage in this norm creation process to ensure the relevance of these norms to their national context. Once adopted, efforts should be made to ensure compliance. This may be monitored through the following indicators: the existence of an independent supervisory authority to ensure compliance of standards including for nanosafety, and the establishment of sanctions. The expected impacts are reduction of accidents and risks, more trust in technology and commitment of all actors.

Conclusion

Latin American and international stakeholders are interested in improving nanosafety in Latin America. Several European and international initiatives fostering nanosafety are in progress and open to increasing Latin American participation. The time is right to join the international norm creation process and influence its relevance to the Latin American realities.

Further reading

This fact sheet is based on literature and experts participation in interviews and events reviewed in the NMP-DeLA final roadmap: www.nmp-dela.eu