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La recherche sur la technologie "gene drive" peut bénéficier la conservation et la santé publique

La communauté internationale est confrontée à des défis existentiels qui compromettent notre future, de la perte catastrophique de la biodiversité à de graves menaces pour la santé publique.

Les cas de paludisme sont à nouveau à la hausse après des décennies de progrès, et les écosystèmes fragiles connaissent une intensification croissante des extinctions. Ces défis nécessitent des outils nouveaux et complémentaires si nous voulons atteindre les Objectifs de Développement Durable et les Objectifs d'Aichi.[i].

Alors que la Convention sur la Diversité Biologique (CDB) se réunit pour la 14ème Conférence des Parties (COP14) en Égypte en novembre, les autorités des pays du monde entier auront l'occasion de réaffirmer l'importance de permettre la recherche pour soutenir l'innovation responsable et la prise de décision basée sur des évidences.

Fermer la porte à la recherche en créant des barrières arbitraires, une forte incertitude, et des retards indéterminés limitera considérablement notre capacité à fournir des réponses aux questions que les responsables politiques, les régulateurs, et le public sont en train de poser. Le moratoire proposé au sein du CDB sur les lâchers expérimentaux empêcherait l'évaluation complète des utilisations potentielles du « gene drive ». La faisabilité et les modalités de tout lâcher expérimental devrait plutôt être évaluées au cas par cas.

Une grande partie des progrès que nous avons réalisés au cours du siècle dernier en matière d'amélioration des moyens de subsistance et du bien-être des communautés du monde entier est le résultat de l'accroissement des connaissances acquises grâce à la recherche scientifique. La science n'a pas apporté des solutions à tous nos problèmes, mais l'amélioration de nos connaissances a été essentielle au progrès. L'innovation dans le domaine des vaccins, par exemple, a sauvé des millions de vies: la réduction de 74% des décès infantiles dus à la rougeole au cours de la dernière décennie témoigne du pouvoir décisif de la recherche scientifique[ii].

"Gene drive" est un domaine de recherche bien établi. Observé pour la première fois dans les années 1920 chez les souris et les drosophiles, "gene drive" est un phénomène naturel qui fait l'objet de recherches depuis de nombreuses années. Des avancées récentes vis-à-vis des outils de modification génétique ont permis des progrès notables au cours des deux années écoulées depuis le premier débat au sein de la CDB sur le "gene drive", ce qui a permis d'approfondir les connaissances et de mieux comprendre les applications possibles du "gene drive", tout en apportant un éclairage supplémentaire sur ses risques, ses limites et son potentiel. .

Bien que ces progrès soient importants, il reste encore beaucoup à faire avant de pouvoir soumettre un organisme "gene drive" à une évaluation réglementaire. Des institutions clés, telles que l'Union Africaine, ont appelé à continuer les travaux dans ce domaine, soulignant la valeur de l'opportunité que cette recherche représente et la nécessité d'une évaluation au cas-par-cas de ces technologies par les autorités nationales.[iii].

Les scientifiques, aux côtés des experts en règlementation, des bailleurs de fonds et des promoteurs de la recherche, travaillent ensemble pour garantir que la recherche est menée de manière sûre et responsable, en s'appuyant sur les expériences précédentes, en utilisant les politiques et les informations déjà publiées, et en mettant en place des systèmes de surveillance et de confinement afin de prévenir les disséminations accidentelles.[iv] [v]. Des discussions sont également en cours pour déterminer les conditions propices aux évaluations de terrain.

Les États Membres peuvent permettre à la Convention sur la Diversité Biologique d'être une plateforme pour le partage des connaissances et des expériences. Nous ne devrions pas nous opposer à l'utilisation d'un outil avant que les risques et les avantages potentiels puissent être entièrement évalués. Nous exhortons les gouvernements à veiller à ce que les décisions prises lors de la réunion de la Convention sur la Diversité Biologique ne constituent pas un moratoire sur la recherche "gene drive", mais offrent plutôt aux Parties une voie équitable et constructive pour comprendre et surveiller ce domaine de recherche.

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[i] Bellard et al., (2016) "Alien species as a driver of recent extinctions" Biology letters vol. 12,2.
Spatz et al., (2017) "Globally threatened vertebrates on islands with invasive species". Science Advances, Vol. 3, no. 10
WHO (2017) World Malaria Report
WHO (2015) Global Technical Strategy for Malaria 2016–2030

[ii] WHO http://www.who.int/immunization/diseases/measles/global_coordination/en/index4.html

[iii] Par exemple: the African Union High Level Expert Panel report (2018) Gene Drives for Malaria Control and Elimination in Africa and the WHO Vector Control Advisory Committee (VCAG) Report of the fifth meeting of VCAG and Report of the eighth meeting of VCAG (2018)

[iv] Par exemple:

- NASEM (2016) "Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values"
- Benedict et al., (2018) Recommendations for Laboratory Containment and Management of Gene Drive Systems in Arthropods.
- James et al., (2018) Pathway to Deployment of Gene Drive Mosquitoes as a Potential Biocontrol Tool for Elimination of Malaria in Sub-Saharan Africa: Recommendations of a Scientific Working Group
- Akbari et al., (2015) Safeguarding Gene Drive Experiments in the Laboratory.
- Emerson et al., (2016) Principles of Gene Drive Research

[v] Des rapports et des décisions Informant la gestion sûre et responsable de la recherche "gene drive" ont étés publiés par, entre autres:

- Dutch National Institution for Health and Environment (RIVM) https://www.rivm.nl/en/Documents_and_publications/Scientific/Reports/2016/februari/Gene_drives_Policy_report
- African Union decision July 2017 https://au.int/sites/default/files/decisions/33559-assembly_au_dec_642_-_664_xxix_e_1.pdf
- Australian Academy of Sciences https://www.science.org.au/files/userfiles/support/documents/gene-drives-discussion-paper-june2017.pdf
- Haut Conseil des Biotechnologies, France (2017) http://www.hautconseildesbiotechnologies.fr/fr/avis/avis-relatif-a-lutilisation-moustiques-gm-dans-cadre-lutte-antivectorielle
- Australian Office of the Gene Technology Regulator http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/amendment%20proposals-1