

Tackling the politics of intersectoral action for the health of people and planet

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ANALYSIS

Tackling the politics of intersectoral action for the health of people and planet

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KEY MESSAGES

- The undermining of natural systems by human activities potentially represents an existential crisis for the health of humanity. However, many actions to address environmental change taken in sectors including energy, transport, agriculture, built environment and industry, have potential co-benefits for health. Emphasising these could help to motivate more ambitious intersectoral action (ISA).
- Such ISA is, however, beset by political challenges, as evidenced by the watered-down commitments to action that emerged from the recent COP26 summit in Glasgow. Bringing these political barriers and enablers into sharp focus is crucial to achieve the ISA needed to protect and promote planetary health.
- Literature from the fields of health, climate, sustainability, governance, political science, and public administration all point to a set of common barriers including outdated institutions and the influence of vested interests. Enablers include political demands arising from the social movements that are pressuring governments to confront climate breakdown and its impacts on human health in an integrated way.
- These social movements, which have a young, growing and politicised membership, could
 offer the key to unlocking the potential for ISA, which has proved such a stubborn challenge
 to date, if accompanied by independent monitoring arrangements linked to existing political
 processes.

Contributors and sources

This paper builds on a webinar chaired by Tomson and hosted by The George Institute for Global Health in May 2021 on 'The intersectoral action needed for the future health of people and planet'. Haines presented the keynote. The panel considered the constituents of effective intersectoral approaches that adapt to – and mitigate – the consequences of environmental change. Unanswered questions loomed large around the politics that facilitate, or hinder, such action and so this analysis was borne.

Kuruvilla, Mahmood, and Petter Ottersen contributed insights and case studies to the panel discussion from multilateral, country, and health systems experiences respectively. Buse led the framing and drafting of the paper. Alden and van der Meulen's experience in communicating and developing thought leadership further strengthened the messaging.

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Report of patient involvement

Patients and/or members of the public were not involved in the creation of this analysis article.

Conflicts of Interest

KB notes receipt of grants or contracts from the World Health Organization and the Bill and Melinda Gates Foundation

SK notes position as <u>Co-chair of the BMJ 2018 series on 'Making multisectoral collaboration work'</u>, and continued engagement on this topic

AH notes Wellcome Trust and Oak Foundation funding for Pathfinder Initiative (Principal Investigator) and that he is Co-Investigator on Wellcome Trust funded research projects entitled Complex Urban Systems for Sustainability and Health and Sustainable Healthy Food Systems. He also noted consulting fees (P/T salary to support institution), Wellcome Trust advisor on climate change and health (March-October 2021)

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Tackling the politics of intersectoral action for the health of people and planet

Intersectoral action (ISA) to secure and sustain the inextricably linked health of people and planet is necessary, urgent, and yet challenging. Kent Buse and colleagues argue that unlocking the potential for such ISA at community, national and global levels requires thinking politically about its facilitators and barriers.

Background

Human activities are wreaking extensive damage on the natural systems of the planet and undermining the prospects for the health of current and future populations. The 2021 report of the Intergovernmental Panel on Climate Change provided further evidence of the increasing urgency of responding to the threats posed by climate change—which the UN Secretary-General labelled 'a code red for humanity'. [1-2]

The climate conference in Glasgow - COP26 - laid bare the highly political nature of international cooperation on climate change, and the futility of failing to recognise that the health and sustainability of the environment are the cornerstone of equitable development.^[3-4] The politics

Box 1. The climate emergency imperative for ISA: mitigation, adaptation, and priority actions for climate-health

In order to reduce the health effects of climate change both adaptation and mitigation are required. Adaptation aims to manage the risks posed by environmental changes. Mitigation aims to cut greenhouse gas emissions that are causing climate change. Increasingly adaptation and mitigation need to be integrated to minimise trade-offs and support equitable solutions. Both require actions across multiple sectors including energy, housing, industry, transport, waste, water and sanitation, health, and agriculture, food, and land use. Many of the actions have (co-)benefits for health, for example by reducing air pollution from burning fossil fuels, promoting physical activity through increases in active transport and supporting the consumption of healthy low environmental impact dietary choices.

Well-designed and implemented carbon pricing and subsidy removal can accelerate ISA by redirecting resources to actions that improve health equity as well as cutting greenhouse gas emissions. Health indicators should be integrated into reporting of efforts to reduce emissions and build resilience to climate change as well as fostering planetary health more widely.

Sources:

Haines A, McMichael A J, Smith K R, et al. Public health benefits of strategies to reduce greenhouse-gas emissions: overview and implications for policy makers. *Lancet* 2009 Dec 19;374(9707):2104-2114. doi: 10.1016/S0140-6736(09)61759-1 pmid: 19942281. United Nations Development Programme. 2021. A Guide to Carbon Pricing and Fossil Fuel Subside Reform: A Summary for Policymakers www.undp.org/publications/guide-carbon-pricing-and-fossil-fuel-subsidy-reform (accessed 22 November 2021).

inherent in intersectoral action (ISA*) on climate-health may be less visible than COP26 but must be addressed to ensure progress at the magnitude and scale required to deliver the goals of the Paris Agreement (Box 1).⁵

Calls for ISA have long been made in key health manifestos^[6,7] and ISA forms a central tenet of the Sustainable Development Goals. Nonetheless, progress on climate-health ISA has been meagre, despite recognition of their shared determinants.^[8,9,10]

The scale and magnitude of the challenges facing humanity in the Anthropocene epoch provide a new imperative for climate-health ISA. The literature offers many lessons on the mechanisms and conditions under which ISA is effective, often describing its barriers and facilitators. We posit that considering the 'how?' of making climate-health ISA work, hinges on thinking politically about it (Box 2).

Box 2. Thinking politically about ISA: The 'three Is'

The extent to which ISA facilitators can be realised and barriers overcome depends on the associated political dynamics (defined by Laswell as 'who gets what, when, how'). This is reflected in the policies and policy environments associated with ISA. Peter John has suggested that policy changes as a result of the ongoing interactions among ideas, interests, and institutions. Carol Weiss argues that policy positions are taken on the basis of interests but also ideology and the information available to those involved in the process. We use the John and Weiss frameworks as a starting point to consider the politics of ISA barriers and facilitators —examining them in relation to 'three Is':

- i) Ideologies: ideas, values and beliefs that influence political positions and the framing employed to inspire action
- ii) Interests: incentives facing stakeholders to engage on specific issues and the power they wield as well as the commitment with which those interests are pursued
- iii) Institutions: structural factors that shape the rules of the game governing policy processes

Sources:

Lasswell D H. The Political Writings of Harold D. Lasswell: Psychopathology and Politics; Politics – Who Gets What, When How; Democratic Character. Glencoe, Illinois: Free Press 1951:525.

John P. Analyzing Public Policy (2nd ed.). Routledge, Oxford: 2012.

Weiss C H. The stakeholder approach to evaluation: Origins and Promise. New Dir Prog Eval 1983 Spring:221. doi: 10.1002/ev.1328

^{*}Sectors refer to segments of the economy and include relevant government ministries and industries. We use 'ISA' to refer to efforts across sectors that contribute towards common goals, both through sectors' individual work and collaborative action. Depending on the sector, the literature uses different terms including 'cross-sectoral', 'multi-sectoral', 'inter-sectoral' 'collaboration' and 'partnerships'.

Barriers and facilitators to ISA

Health (and illness) results from actions taken by individuals, communities, corporations, and governments within and, crucially, outside the health sector. The same logic applies to planetary health¹¹ with health, business and environment literature reporting similar barriers to, and facilitators of, ISA. [12, 13, 14, 15, 16, 17] Based on a rapid literature review[†], we thematically grouped the barriers and facilitators (Table 1). Table 2 presents a selection of case studies, referred to in the analysis, demonstrating these facilitators and barriers at different levels in diverse geographical settings.

Table 1. Thematic grouping of ISA barriers and facilitators

Barriers	i)	Lack of political support
	ii)	Inadequate leadership and linkages across sectors
	iii)	Organisational and institutional constraints
Facilitators	i)	Executive leadership
	ii)	Shared cross-sectoral goals and coordination
	iii)	Civic mobilisation
	iv)	Learning by doing
	v)	Accountability

Applying a political lens to ISA barriers

Lack of political support

The lack of political support to impose shared cross-sectoral goals across fragmented bureaucratic structures is a significant constraint to ISA. The failure of the 'executive' (or those in authority) to signal that they value such action typically results in failure to: establish the necessary policies, financing and structures to facilitate and incentivise collaboration; put the right people in boundary-spanning posts; and to ensure accountability mechanisms to drive, chart and correct progress.

The long timeframes and complexity involved can dissuade leaders from spending political capital on ISA. When ISA would entail confrontation with commercial interests, power imbalances between private and public sectors can lead to political apathy. Apathy can be entrenched through systemic corruption (see Thailand's National Health Commission; Table 2). Despite the centrality of politics to

[†] We used Google Scholar to search for articles published between 2011 and 2021 using the search terms 'examples' 'political' 'environment' 'cross-sector' OR 'multi sectoral' or 'intersectoral' to identify empirical, review and theoretical papers on the facilitators and barriers of ISA. The search returned 18100 papers. MVDM reviewed abstracts for review. Additional papers were identified through a Delphi process based on the authors' expertise and experience regarding a political framework for ISA and population and planetary health.

the success of ISA, de Leeuw's review of Health in All Policies (HiAPs) found 'there is significant naiveté when it comes to the politics and power games and the role that the health sector can or should play.' The same is true in the environment sector. For example, an analysis of ISA to stop deforestation concludes that when collaboration fails, bold contestation works because it takes civil society activism to apply pressure on decision-makers to exercise political leadership for ISA. 19

Inadequate leadership and linkages across sectors

A core leadership function of government is to promote the public good and mitigate public harm, particularly through regulatory and fiscal measures. With the increasing imbalance of economic power between government and industry (with corporations comprising the majority of the world's 100 largest economies)²⁰, leadership for effective regulation to address critical public issues across multiple sectors is increasingly challenging and inadequate.

The reasons for lack of leadership on the ISA agenda reflect competing interests and ideologies and weak linkages across these. Oreskes and Conway showed how scientific evidence on a range of topics from tobacco to climate change was undermined by vested interests to sow doubt and undermine the case for action.²¹ In the case of the health sector, perhaps most important is the biomedical orientation of many in leadership positions who either do not appreciate the critical role of the political and social determinants of health, or are overwhelmed by unfamiliar challenges.²² For some, leadership on ISA would mean establishing new relationships outside their comfort zones. For others, ISA poses a perceived threat to their authority and/or resource base -- affecting their interests and hence incentives for collaboration. The City Blueprint Approach in Ahmedabad, India reflects this in the inadequacy of existing policy instruments, poor compliance, and weak intersectoral implementation mechanisms (Table 2).

Organisational and institutional constraints

These barriers to ISA stem partly from organisational cultures and disciplinary training. Narrow specialisation may not value collaboration and cooperation nor foster mindsets and skillsets amenable to working with other sectors, and/or may use inaccessible, specialist language. These weaknesses might result in a failure to consider incentives and goals pursued by other sectors — interests that must be met for sustainable collaboration. In the case of cooperation on HiAPs, it has been argued that 'starting with the health argument may be counterproductive or politically inappropriate'.¹⁸ There is also institutional inertia that hinders organisations established with a limited set of goals from pivoting to embrace shared goals. So, while organisational cultures more likely lead to rivalry than a spirit of cooperation for ISA, leaders who have collaborative tendencies

may find themselves on what de Leeuw terms 'the periphery of the policy playing field and political radar'. 18

Applying a political lens to ISA facilitators

Executive leadership

Executive leadership, exercised at all levels, constitutes a critical facilitator. Such leadership creates the ultimate 'political will' for sectors to cooperate in that it is authoritative, can shape mandates and demand compliance. The exercise of that leadership can take many forms, including: altering the incentive structures of those who might otherwise pursue narrow sectoral goals; appointing boundary spanners to positions of authority; and establishing institutional arrangements and environments across government that facilitate ISA. Executive leadership is uniquely placed to provide ISA finance and cross-sector budgets, as well as the mechanisms to hold ministries and other actors accountable (Ghana and India 'One Health' case; Table 2). By virtue of their positions, executives can often see the bigger picture, including overarching goals that transcend sectors, and define narratives that speak to shared values and inspire those around them to action.

What creates and sustains such leadership varies according to context; it might be in response to international commitments, a new economic imperative, carefully crafted values-based narratives from advocates, or political demands from issue-specific constituencies.

Shared cross-sectoral goals and coordination

The literature places considerable emphasis on the structural mechanisms established by governments for coordination across ministries through joint committees, shared workplans and pooled budgets, exemplified in the health sector through HiAPs approaches. From a political perspective, the success of these initiatives depends on acknowledging and accommodating diverse and sometimes competing interests. 'Soft' elements are also important including the creation of organisational cultures and ideologies that reward such efforts, providing incentives, and building informal networks across line-ministries to foster shared values and trust. They tend to rely on a leadership type, interpersonal behaviour traits, and skill sets which include persuasion, nudging, negotiation, conflict resolution and trust-building (Thailand's National Health Commission; Table 2).

Civic mobilisation

Changing behaviour for human and planetary health requires interaction between the public (both as citizens and consumers), policymakers and private sector leaders. Governments have an

obligation to serve public interests, including protection against commercial interests, but this often requires 'bottom-up' demand. The Montreal Protocol provides a good example of the science community providing compelling evidence around which to mobilise and foster commitment to change (Table 2). [23-24] Citizens have an important role in demanding change and/or more ambitious action 25 through consumer choices, civil society organisations and social movements (see Swedish example; Table 2). They can also be a powerful voice demanding urgent and coordinated action across government (as per activism of the AIDS movement; Table 2).

Learning by doing

To be successful, ISA must evolve to overcome challenges, navigate competing interests, bridge ideological differences, and reconcile different ways of working. This requires continuous and transparent processes of learning by doing (from successes and failures) while recognising that success can variously be defined by different sectors.¹⁴

However, the institutional factors to create enabling environments for 'learning by doing' are often lacking. Graham et al. call for a 'learning society' approach to be applied to ISA: 'this environment needs nurturing at all levels, including sufficient incentives - political, financial, and societal.'²⁶ Similarly, the experience of Thailand's National Health Commission found that building capacity to generate evidence and ensure its use by multisectoral agencies was critical at individual, institutional and system levels to strengthen health literacy (Table 2).²⁷ Meanwhile, Baum and colleagues suggest that a policy network supportive of ISA was important to Australian HiAPs.²⁸

Accountability

Robust governance and accountability mechanisms are a prerequisite for ISA by documenting responsibility for actions. Legislation in support of ISA, often in response to political mobilisation, can have a similar effect as it draws on established mechanisms in government to ensure accountability. Examples include the Public Health Act in South Australia and the mandate for health equity in Scandinavian municipality budgets. [29,30] Where lines of accountability are blurred, integrated accountability could facilitate ISA progress wherein the contributions of different sectors are considered holistically. Independent review by those not directly involved in policy or implementation can identify barriers such as vested interests as well as shared goals and lessons. Examples include the UNSG's Independent Accountability Panel (Table 2), and community groups that provide lived experience or activist/advocacy groups that apply political pressure, to ensure adherence to the shared ISA project ('Inherit' case; Table 2). Such accountability requires

participatory forms of governance leveraging users and citizen power to ensure the bureaucratic machinery implements ISA.

Going Forward

The literature suggests that ISA facilitators are synergistic. From a political perspective it is apparent that leadership on ISA would be more forthcoming if there were demands from the bottom 'up', for example from civil society – as exemplified by the Montreal Protocol. And it is evident that sectoral leadership would be more responsive to ISA if inspired by the vision of what ISA can deliver ('Inherit' case; Table 2).

Compelling narratives are similarly key to mobilising politicians and the public. The Independent Accountability Panel (Table 2) suggests that putting people, as opposed to economic growth, at the centre of policy can help secure support. Those stakeholders vested in human health and those in planetary health also share the fundamental value of addressing inequality which ought to provide common ground to foster collaboration.

From the top, a more systematic approach with clearer articulation of which ministries should initiate and lead on different ISAs on climate-health issues is critical, not least so relevant actors can be held accountable, including by civil society. Nonetheless, if ISA is to be effective in different contexts, global concepts like Net Zero and forest loss need to be translated to local situations with context-specific ISA solutions.

Well-designed and implemented carbon pricing and subsidy removal can accelerate ISA by redirecting resources to actions that improve health equity as well as cutting greenhouse gas emissions.³¹ Health indicators should be integrated into reporting of efforts to reduce emissions and build resilience to climate change as well as fostering planetary health more widely.

To date, political dynamics have served as barriers to ISA. Yet there are grounds for optimism. The Human Rights Council recently recognised the right to a healthy environment³² which may lead to greater attention, new legislation, and litigation on climate-health ISA. The activism of 'the climate movement' provides further reasons for hope. It may newly politicise public health, which has grown away from its overtly political roots,³³ and in so doing encourage ISA. It may also confront the shared commercial determinants of illness and environmental degradation by demanding more effective regulation. At the same time, public health should aim to diminish political polarisation by focusing on common aspirations for a healthy and sustainable future that can command widespread support.

The fact that divisions are emerging within the private sector between those interests that see their future business model tied to a more sustainable economy and those who base their future on opposing change, with a large middle group that could lean in either direction depending on consumer demand and regulatory pressures, gives further grounds for hope. The challenge is to strengthen the first of these and influence undecided middle ground by calling out attempts at 'greenwashing'.

Accountability for progress on the climate-health ISA ought ultimately to be to the electorate, not shareholders, although the latter could play a positive role. Significant investments are required to inform and engage the public on tracking commitments made by governments and corporations, as are significant investments in independent verification.

Linking climate-health ISA to existing political processes holds considerable promise. One opportunity lies in the United Nations Framework Convention on Climate Change process building on work on health in the Nationally Determined Contributions to climate action under the Paris Agreement.³⁴ Another opportunity lies in the review process of the SDGs which spans from local through global levels, culminating in the High-Level Political Forum.³⁵ Building on the lessons from the UNSG's Independent Accountability Panel, we suggest that the establishment of an independent review mechanism to report on climate-health ISA to the Forum could provide the structure to drive progress.

The climate emergency provides renewed impetus to motivate political leaders to capitalise on the opportunities for climate-health ISA. The sooner we act politically on the facilitators and barriers to ISA, the closer humanity will be to realising the right to a healthy environment and the goals of sustainable development.

END

Table 2. Factors, variables, and techniques associated with ISA: illustrative examples

Example	Description	Facilitators and/or barriers demonstrated
Global	706	
UNSG Independent Accountability Panel for Every Woman, Every Child, (EWEC) Every Adolescent (IAP) recommendations IAP process [‡]	Since formation in 2016 the IAP has evaluated work in the Every Woman Every Child (EWEC) movement, reviewed accountability mechanisms, and offers reflections and recommendations on the IAP's transition to an integrated health and SDG accountability mechanisms. The process identifies an accountability framework that could be useful in designing and evaluating ISA practice.	 in 2016 to act as the independent accountability arm of the Every Woman Every Child (EWEC) global movement. Since 2016 the group of experts evaluated ten years of work in the Every Woman Every Child
SDG3 Global Action Plan for Healthy Lives and Well-being for All (GAP) Initiative§	The Global Action Plan for Healthy Lives and Well-being for All (GAP) initiative brings together 13 multilateral health, development, and humanitarian agencies to better support countries to accelerate	 Executive Leadership, learning by doing, accountability The mandate for the GAP initiative came from three Heads of State with the backing of the UN Secretary-General.

TABLE REFERENCES

[‡] IAP. 2021. The Health of Women, Children and Adolescents is at the Heart of Transforming our World: Empowering Accountability Report. <u>iapewec.org/reports/iap-2021-final-report</u> (accessed 2 December 2021).

⁶ World Health Organization. Global Action Plan for Health Lives and Well-being for all: Overview of GAP Operating Model. May 2020. https://www.who.int/docs/default-source/global-action-plan/operating-model-graph-and-narrative---web-version.pdf?sfvrsn=2c02de89_4 (accessed 1 November 2021).

progress towards the health-related The GAP involves multilateral health, development, and humanitarian member organisations Sustainable Development Goals (SDGs). (such as WHO, GAVI, World Bank) working to support countries to accelerate progress GAP serves as a platform for ISA by better against the SDG 3 targets. aligning their ways of working to reduce Executive Heads of the member organisations constitute the principals of the GAP and are inefficiencies and provide more accountable for its success: they set strategic direction, make ultimate decisions, evaluate streamlined support to countries. progress, and report annually – in short, there is leadership and support from the top. Day-to-day functioning of the GAP is vested in focal points appointed by the Heads of Agency. They develop, discuss, and agree the overall GAP workplan, the monitoring framework and monitor progress. Importantly, they coordinate relevant actions within their own agencies to further the joint overall GAP workplan. The operational ISA work is undertaken in thematic working groups, for example on financing, R&D, determinants, and meaningful engagement of civil society. Country facing teams of select GAP members support countries with the various offerings of the working groups. The GAP is supported by a small secretariat to provide glue to the initiative. The GAP deliberately entails learning by doing – regular reflection by the focal points group and joint efforts such as developing an evaluability framework. Accountability is ensured by regular reports as well as an envisioned independent external evaluation. The United Nations Joint | UNAIDS is a joint program of 11 Executive leadership, civic mobilisation, shared cross-sectoral goals and coordination, Program on AIDS cosponsoring United Nations agencies with accountability (UNAIDS)** a mandate to lead the global AIDS The UNAIDS joint program structure involves a board made up of representatives from UN response. Each of the cosponsors have co-sponsors, governments and affected civil society organisations. specific mandates ranging from gender Executive leadership is exercised by representation of chair at ministerial or ambassadorial leguality to decent work to education, all of level and among the cosponsors by heads of agency. which are relevant to a robust AIDS A formal division of labour among the cosponsors, a pooled budget, a shared accountability response. The Joint Program was framework and a dedicated secretariat all facilitate ISA. At the technical level, a range of established to provide ISA across the formal and informal working groups exist to facilitate collaboration across agencies. various determinants of HIV and provides The board meets twice a year to report on progress towards shared goals, providing a means an example of civil representatives of accountability. mobilising to achieve ISA. One barrier to negotiate is the fact each of the cosponsors has its own mandate. This inevitably means the level of engagement and support of activities in the shared plan depends on the extent to which their boards demand it of them.

^{**} UNAIDS. Global Review Panel on the Future of the UNAIDS Joint Programme. Refining and Reinforcing the UNAIDS Joint Programme Model. www.unaids.org/sites/default/files/media asset/final-report grp en.pdf (accessed 1 November 2021).

The Montreal Protocol on	The Montreal Protocol on Substances that	Civic mobilisation, shared cross-sectoral goals and coordination, accountability
Substances that Deplete the Ozone Layer	Deplete the Ozone Layer is a global agreement to protect the Earth's ozone layer by phasing out the chemicals that deplete it. It is an example of science mobilising ISA efforts.	 A scientific paper by Molina & Rowland's 'Stratospheric sink for chlorofluorocarbons: chlorine atom-catalysed destruction of ozone' was published in 1974^{††}. The research 'fell like a scientific bombshell, one whose repercussions would be felt around the world'. ^{‡‡} A second scientific work identifying the breakdown of chlorofluorocarbons (CFCs) as the cause of the ozone loss was published in 1985 by Farman and Gardiner. ^{§§} In 1985 the Vienna Convention for the Protection of the Ozone Layer was created in response to these advancements of understanding on the effect of human activity on the health of the planet. *** The Montreal Protocol followed two years later, establishing a shared action plan and share accountability framework; it provides a set of practical, actionable tasks agreed to in 1987 and achieved universal participation with confirmation by every country on 16 September 2009, the 'first treaties of any kind in the history of the United Nations system to achieve that aspiration'. ††† The parties to the Protocol meet once a year to make decisions, including adjustments or amendments aimed at ensuring the successful implementation of the agreement. One such meeting led to the Kigali amendment in 2016 for the phase-down of hydrofluorocarbons (HFCs) by cutting their production and consumption. ††† In 1995 F. Sherwood Rowland (1927-2012) and Mario J. Molina (*1943) were recognised with the Nobel Prize in Chemistry (sharing with Paul J. Crutzen of the Max Plank Institute for Chemistry, Mainz, another pioneer in stratospheric ozone research). ^{§§§}

^{††} Molina M, Rowland F. Stratospheric sink for chlorofluoromethanes: chlorine atom-catalysed destruction of ozone. Nature 1974;249:810–812. doi: 10.1038/249810a0 accessed 2 December 2021)

^{‡‡} American Chemical Society. Chlorofluorocarbons and Ozone Depletion: A National Historical Chemical Landmark. www.acs.org/content/acs/en/education/whatischemistry/landmarks/cfcs-ozone.html (accessed 3 November 2021).

⁵⁵ Farman J, Gardiner B, Shanklin J. Large losses of total ozone in Antarctica reveal seasonal ClO_x/NO_x interaction. Nature 1985;315:207–210. doi: 10.1038/315207a0 (accessed 3 November 2021).

^{***} United Nations, Treaties: The Vienna Convention for the Protection of the Ozone Layer. https://ozone.unep.org/treaties/vienna-convention (accessed November 2021).

^{***} United Nations, Treaties: The Montreal Protocol on Substances that Deplete the Ozone Layer. https://ozone.unep.org/treaties/montreal-protocol (accessed November 2021).

^{***} The Montreal Protocol evolves to fight climate change https://www.unido.org/our-focus-safeguarding-environment-implementation-multilateral-environmental-agreements-montreal-protocol/montreal-protocol-evolves-fight-climate-change (accessed 2 December 2021)

^{§§§} American Chemical Society. Chlorofluorocarbons and Ozone Depletion: A National Historical Chemical Landmark. www.acs.org/content/acs/en/education/whatischemistry/landmarks/cfcs-ozone.html (accessed 3 November 2021).

Thailand's National	This example of Thailand's PM-chaired	Executive leadership, shared cross-sectoral goals and coordination, learning by doing
	National Health Commission is drawn from a larger paper that examines challenges and opportunities in multisectoral actions for health.	 Thailand implemented a National Health Plan in 2007 which involves a commission chaired by the Prime Minister, made up in equal parts of multisectoral public policymakers, academia and professionals, and CSOs including private sector which convenes the annual National Health Assembly. By involving all key actors in the National Assembly Process there is a level of accountability and shared learning, which has increased trust.
Implementing a multi- sectoral collaboration in the USA ^{††††}	This paper describes the key enablers and challenges in the implementation of 'Voices for Healthy Kids', a multisectoral collaboration that "seeks public policy changes to improve food and physical activity environments to promote healthy weight for all children and adolescents in the United States."	 Executive leadership, civic mobilisation, robust accountability mechanisms Provides grant funding to not for profit organisations to launch campaigns that engage, organise, and mobilise advocates to improve the food and physical activity environment at state or local levels The multisectoral collaboration model adopted enabled 'more than 140 stakeholder organisations to align resources in pursuit of shared goals [] to improve food and physical activity environments to promote healthy weight for all children and adolescents in the United States' Robust accountability mechanisms with third party evaluations were established to collect, evaluate, and provide feedback to ensure continual improvement. BARRIERS: Stakeholders cited 'trust and transparency between the American Heart Association [NFP] and collaborating organisations early on'
ndia ****.	This comparative analysis explores how intersectoral collaborations for One Health (through data on rabies prevention and control, avian flu, and flood risk management) were initiated, managed, and taken to scale.	Executive leadership

[&]quot;Tangcharoensathien V, Srisookwatana O, Pinprateep P, et al. Multisectoral Actions for Health: Challenges and Opportunities in Complex Policy Environments. *International journal of health policy and management*, 2017;6(7);359–363. doi: 10.15171/ijhpm.2017.61

^{*****} Callahan E, Hollander M, Vaca McGhie D, et al. Voices for Healthy Kids: a multisectoral collaboration to accelerate policy changes that promote healthy weight for all children and adolescents in the United States. BMJ 2018;363:k4763. doi:10.1136/bmj.k4763

^{****} Perez Arredondo A M, Yasobant S, Bruchhausen W et al. Intersectoral collaboration shaping One Health in the policy agenda: A comparative analysis of Ghana and India. One Health 2021;13. doi: 10.1016/j.onehlt.2021.100272 pmid: 34136629

in local municipalities, Sweden.§§§§

Nature-based approaches Nature-based approaches recognise that human societies and their development are dependent on natural systems. This paper examines how these approaches were implemented into Swedish municipalities' daily planning practices and associated governance.

Civic mobilisation, accountability, learning by doing

- The authors outline the challenge of nature-based planning and associated climate governance, being that they require transdisciplinary approaches and unite different actors' efforts and capacities.
- Sweden is hailed as a pioneer in environmental governance. In this study municipal staff and individual champions overcame multiple constraints (institutional/organisational; policy/legal; financial and human resources; knowledge/capacity) by employing these identified strategies for success: (1) targeted stakeholder collaboration, (2) strategic citizen involvement, (3) alteration of internal cooperation structures, (4) outsourcing, and (5) concealed science-policy integration.
- Civic support was mobilised through 'a diversity of strategic citizen involvement activities aimed to increase public awareness and avoid contestation/protest'. Activities take place in the initial assessment or planning phases including planning walks, planning games, digital dialogues and targeted media.
- Robust accountability mechanisms included changes to internal cooperation, working structures and capacities to ensure integration, shifting from working in silos towards more intersectoral work and improving communication by breaking down formalities.
- Concealed science—policy integration progressively mainstreams scientific considerations into informal/formal planning regulations and mechanisms/tools. 'Individual champions who apply this strategy manage to create, through seemingly small and thus little-noticed stepby-step changes, a transformation of policy landscapes, which leads to increasing policy support', such as including environmental goals, or developing check-lists to ensure due consideration.
- Learning by doing 'these strategies reveal an increasing need for relational approaches that, in turn, require individuals to develop the cognitive/emotional capacity to establish trust, communicate inclusively and promote social learning, while at the same time dealing with an increasingly complex and uncertain working environment.'

^{§555} Wamsler C, Wickenberg B, Hanson H, et al. Environmental and climate policy integration: Targeted strategies for overcoming barriers to nature-based solutions and climate change adaptation, Journal of Cleaner Production, 2020;247:119154. doi:10.1016/j.jclepro.2019.119154

Application of the City	This paper assesses applicability of the City	Executive leadership
Blueprint Approach in Ahmedabad, India*****	Blueprint Approach (developed by Watershare and the European Innovation Partnership on Water) and its application in Ahmedabad, India.	 Executive leadership, 'One of the most remarkable results is that visionary agents within the government use their authority to set ambitious goals for all five water-related challenges.' Lack of accountability is a barrier in this example; 'insufficient statutory compliance and the inadequate use of policy instruments are limiting the implementation of these goals while monitoring and policy evaluation are insufficient to improve implementation.'
INHERIT; promoting healthier, sustainable lifestyles in cities in Belgium, Czech Republic, Germany, Latvia, Republic of Macedonia, The Netherlands, Portugal, Spain, Sweden, United Kingdom *****	INHERIT is a project funded under the EU Horizon 2020 research programme (2016-2019) that aims to identify, investigate and promote effective intersectoral policies, interventions and innovations that enable and encourage healthier, more sustainable and equitable behaviours and lifestyles.	they shared common goals and they valued cooperating and saw the necessity of cooperating.'
A greener and smarter city; Korea, Seoul *****	This ASEAN report chapter describes the current state of the economic, social, physical development and governance environments of Seoul, and the sustainable development initiatives involving various types of partnerships undertaken to create a more liveable and prosperous city.	 Executive leadership, Shared cross-sectoral goals and coordination, Accountability 'Seoul Metropolitan Government (SMG) declared a Sustainable Policy Initiative along with action plans. The initiative encompasses environmental management, creative economic development, and improvement of social equity.' 'Seoul has become more of a 'command and control' service centre, whereas other municipalities accommodate the spatial needs for production and logistics. Thus, it is important for Seoul to imagine and pursue a win-win regional economic and industrial polic framework at the metropolitan level, which is still in the pipeline' 'Focused on creating decent jobs for residents through public-private partnerships and has mobilized local business networks to create jobs and attract investment into communities around Seoul. Such efforts continue within the city. In every urban regeneration project in Seoul, the SMG collaborates with communities and local industry to sustain economic

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^{*****} Aartsen M, Koop S, Hegger D, et al. Connecting water science and policy in India: lessons from a systematic water governance assessment in the city of Ahmedabad. Reg Environ Change 2018 18;2445–2457. doi: 10.1007/s10113-018-1363-1

[&]quot;**** Van der Vliet N, Den Broeder L, Staatsen B, et al. INHERIT: Success Factors, Barriers and Future of Intersectoral Cooperation: A Qualitative Evaluation of Twelve INHERIT Case Studies. EuroHealthNet Brussels. June 2019 https://inherit.eu/wp-content/uploads/2020/02/D5.1-Success-Factors-Barriers-and-Future-of-Intersectoral-Cooperation.pdf (accessed 3 November 2021)

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activities and promote new opportunities. Project success is measured based on economic development as well as physical improvement.'

- 'The fundamental concept of Social Innovation is collaborative governance. The Seoul City: Administration established an Information Disclosure Policy Division, aims at the disclosure of administrative information and the creation of new economic and social values through information sharing.'
- 'In 2012, for the first time for a large-scale local government in Korea, the SMG adopted a Residents' Participation Budget System; residents will be able to decide how around USD 45 million should be utilized. For 2013, USD 42 million was spent on 120 projects proposed by residents.'
- 'Creative Governance aims to achieve two goals. One is to enhance Seoul's competitive edge, and the other is to improve the residents' quality of life. Under this initiative, policy workshops were held frequently to gather the opinions of experts and residents on SMG policies, and to reflect those views in future policies.'

END NOTES

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