

Panel Discussion : Environment

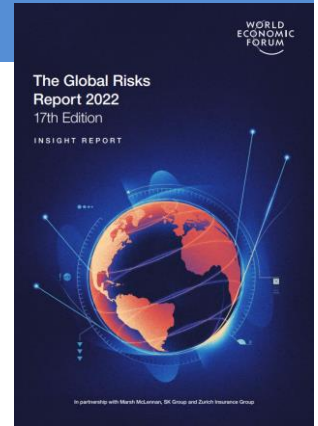
Climate-Resilient Development and Adapting to Climate Change

29th, September, 2022

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Climate Change Adaptation

Panel Discussion : Environment

World Economic Forum Lists Biggest Global Risks of 2022, Climate Tops 2022 WEF Global Risks Report



“Identify the most severe risks on a global scale over the next 10 years”

■ Economic ■ Environmental ■ Geopolitical ■ Societal ■ Technological

1st Climate action failure

2nd Extreme weather

3rd Biodiversity loss

4th Social cohesion erosion

5th Livelihood crises

6th Infectious diseases

7th Human environmental damage

8th Natural resource crises

9th Debt crises

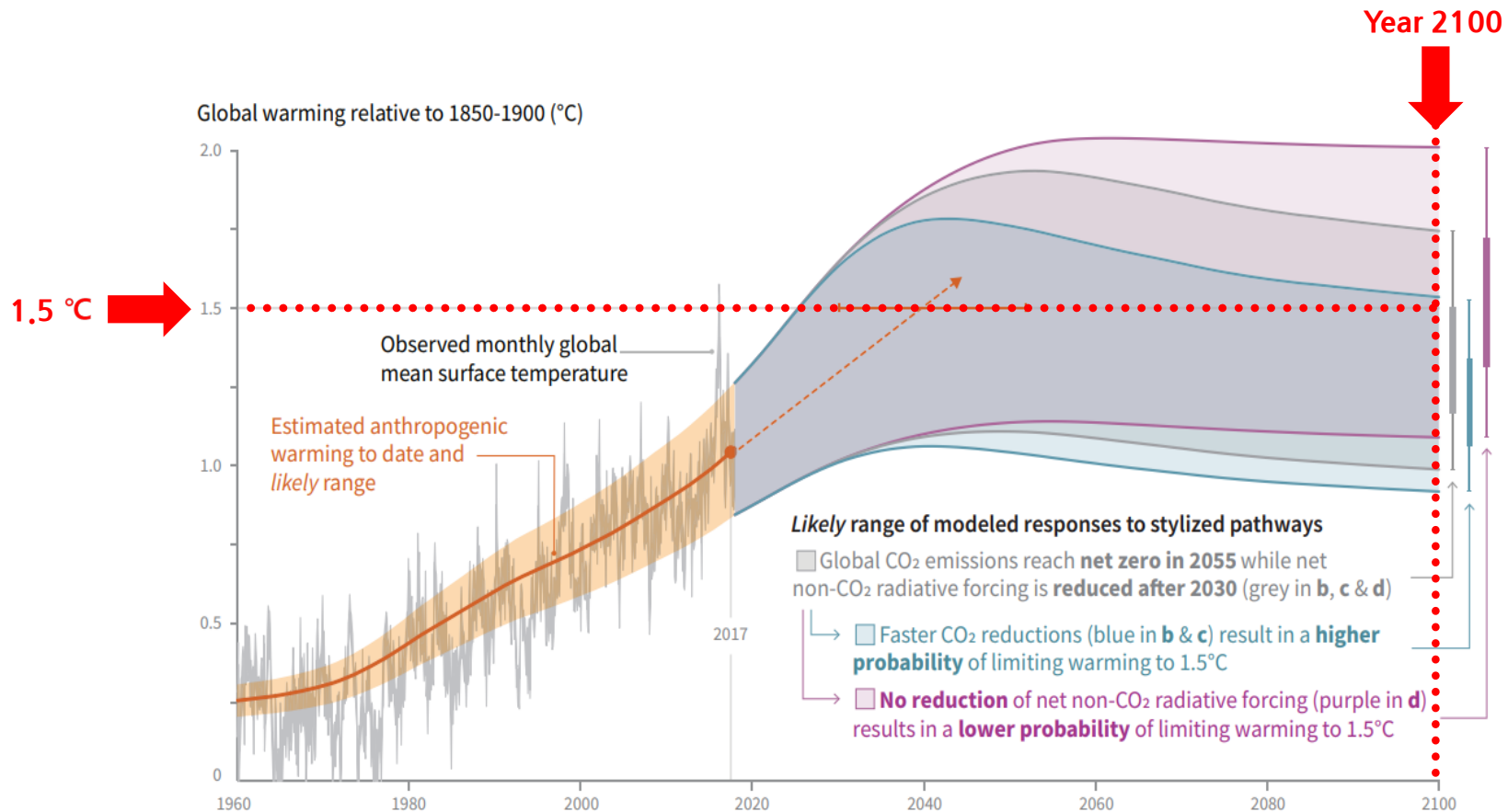
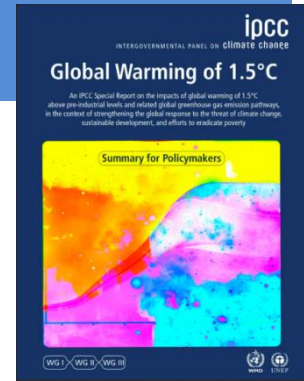
10th Goeconomic confrontation

Source: World Economic Forum Global Risks Perception Survey 2021-2022

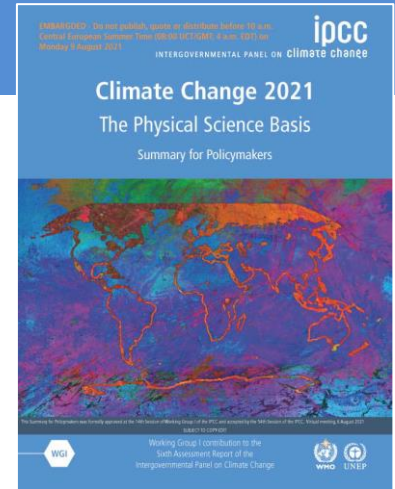
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From IPCC SR1.5

- To control under 1.5°C global warming is much advantageous for our sustainability
- To achieve this goal, we should decrease CO₂ & other GHGs emission

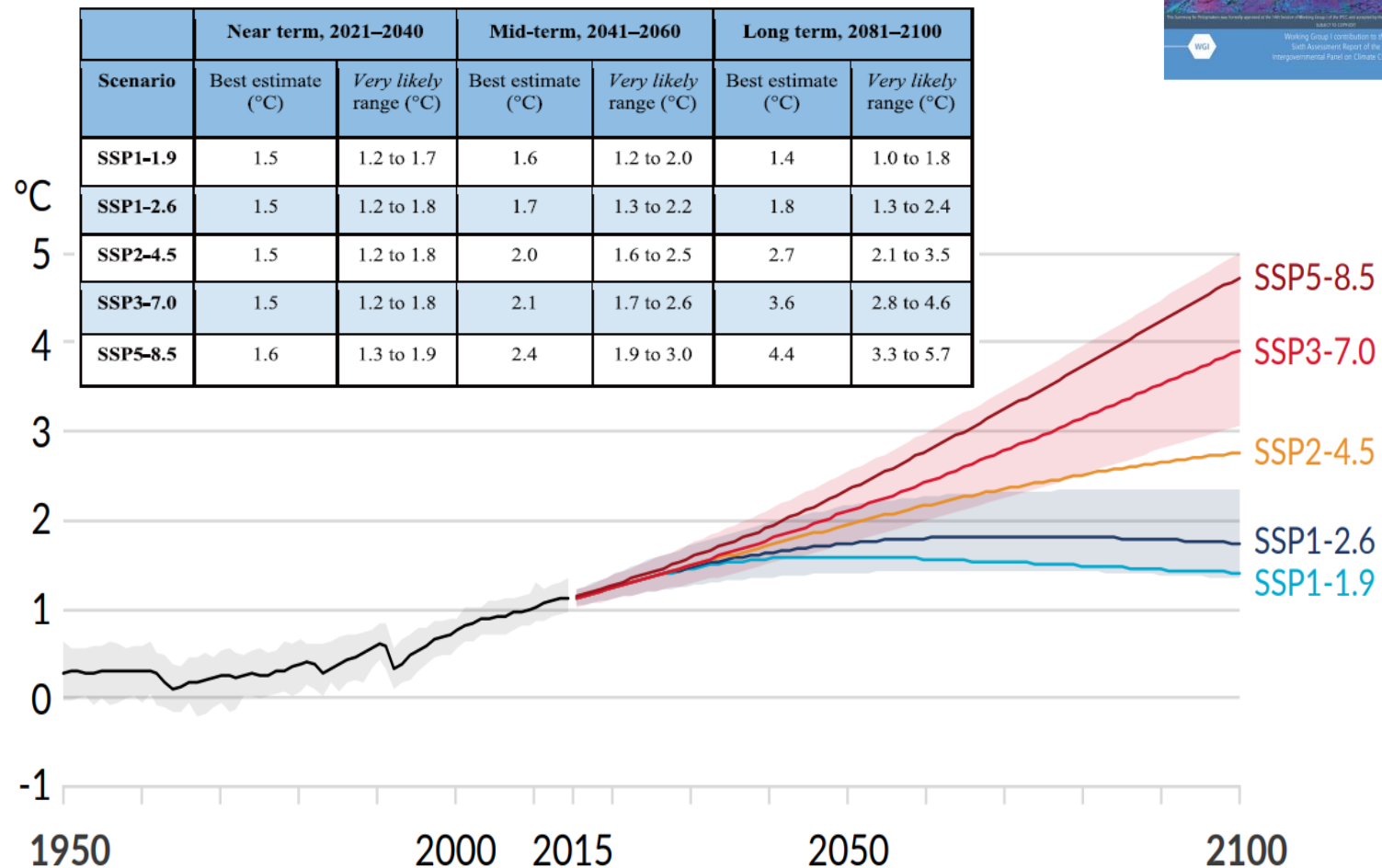


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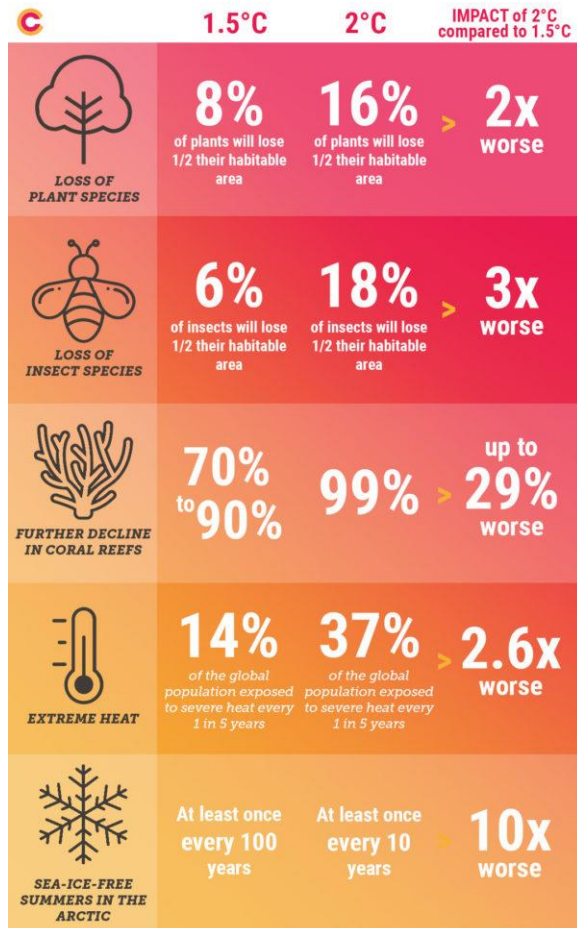
from IPCC AR6 WG1(2021)

- Global warming level is already about 1.1°C.
- We will touch 1.5°C warming level within 20–years (before 2040)



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The Difference between 1.5 and 2.0 degrees warming



CLIMATECOUNCIL.ORG.AU | crowd-funded science information

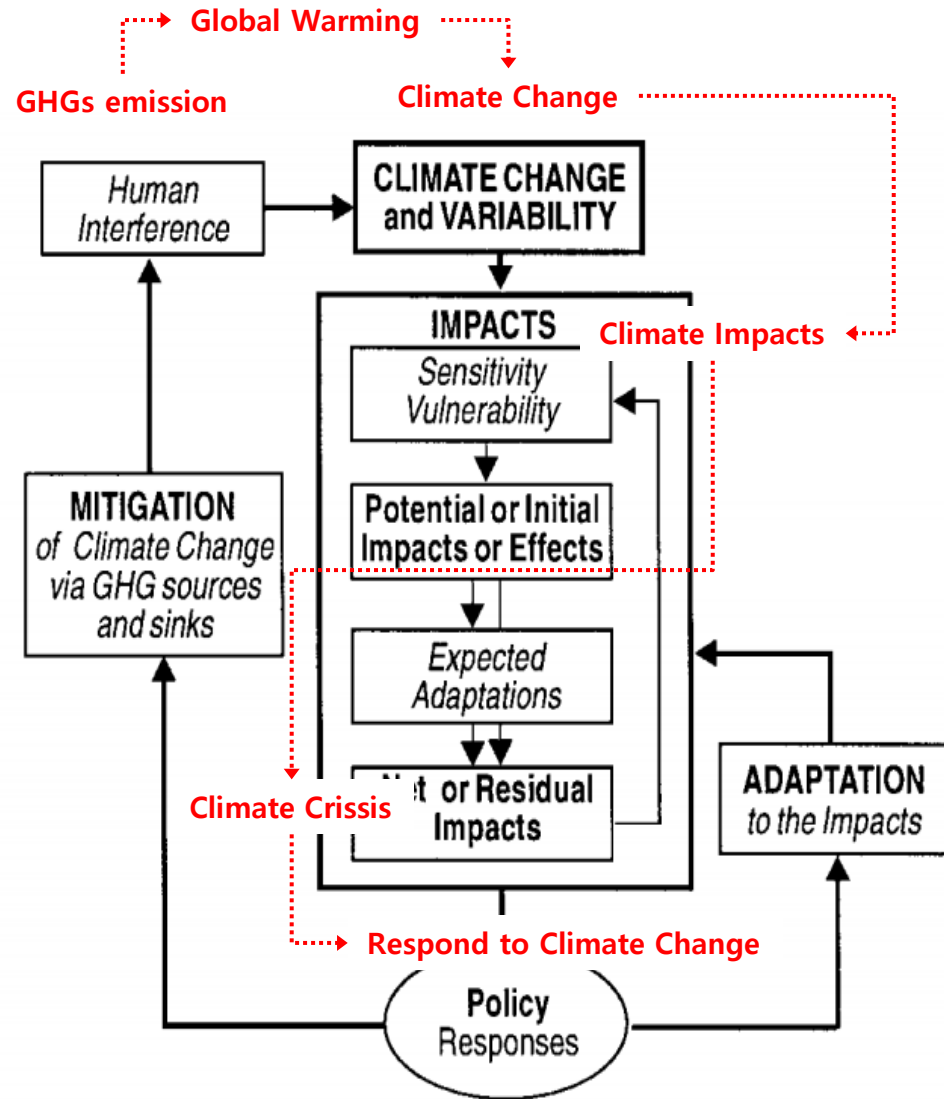
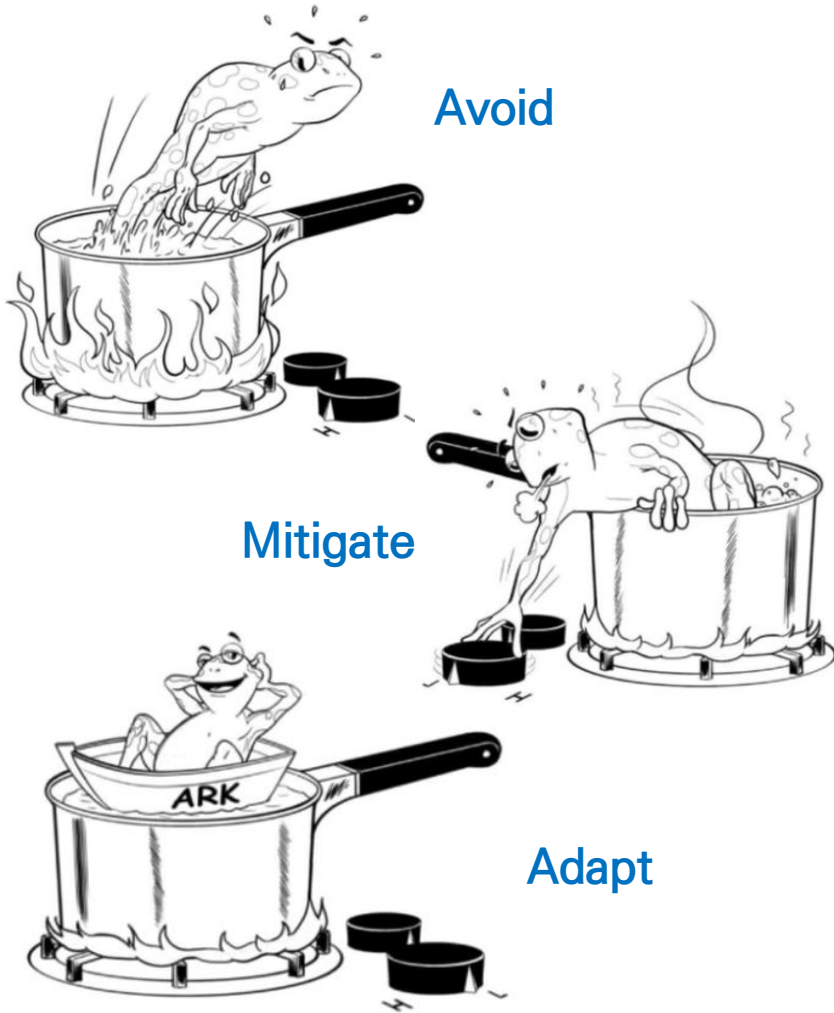
* source: <https://www.climatecouncil.org.au/resources/infographic-the-difference-between-1-5-and-2-degrees-warming/>

	1.5 °C	2 °C		
Heat wave (warm spell) duration [month]				
Global	1.1 [1;1.3]	1.5 [1.4;1.8]	Tropical regions up to 2 months at 1.5 °C or up to 3 months at 2 °C	
Reduction in annual water availability [%]				
Mediterranean	9 [5;16]	17 [8;28]	Other dry subtropical regions like Central America and South Africa also at risk	
Increase in heavy precipitation intensity [%]				
Global	5 [4;6]	7 [5;7]	Global increase in intensity due to warming; high latitudes (>45 °N) and monsoon regions affected most.	
South Asia	7 [4;8]	10 [7;14]		
Global sea-level rise				
in 2100 [cm]	40 [30;55]	50 [35;65]	1.5 °C end-of-century rate about 30 % lower than for 2 °C reducing long-term SLR commitment.	
2081–2100 rate [mm/yr]	4 [3;5.5]	5.5 [4;8]		
Fraction of global coral reefs at risk of annual bleaching [Constant case, %]				
2050	90 [50;99]	98 [86;100]	Only limiting warming to 1.5 °C may leave window open for some ecosystem adaptation.	
2100	70 [14;98]	99 [85;100]		
Changes in local crop yields over global and tropical present day agricultural areas including the effects of CO₂-fertilization [%]				
Wheat	Global	2 [-6;17]	0 [-8;21]	Projected yield reductions are largest for tropical regions, while high-latitude regions may see an increase. Projections not including highly uncertain positive effects of CO ₂ -fertilization project reductions for all crop types of about 10 % globally already at 1.5 °C and further reductions at 2 °C.
	Tropics	-9 [-25;12]	-16 [-42;14]	
Maize	Global	-1 [-26;8]	-6 [-38;2]	
	Tropics	-3 [-16;2]	-6 [-19;2]	
Soy	Global	7 [-3;28]	1 [-12;34]	
	Tropics	6 [-3;23]	7 [-5;27]	
Rice	Global	7 [-17;24]	7 [-14;27]	
	Tropics	6 [0;20]	6 [0;24]	

* source: Carl-Friedrich Schleussner et al. 2016

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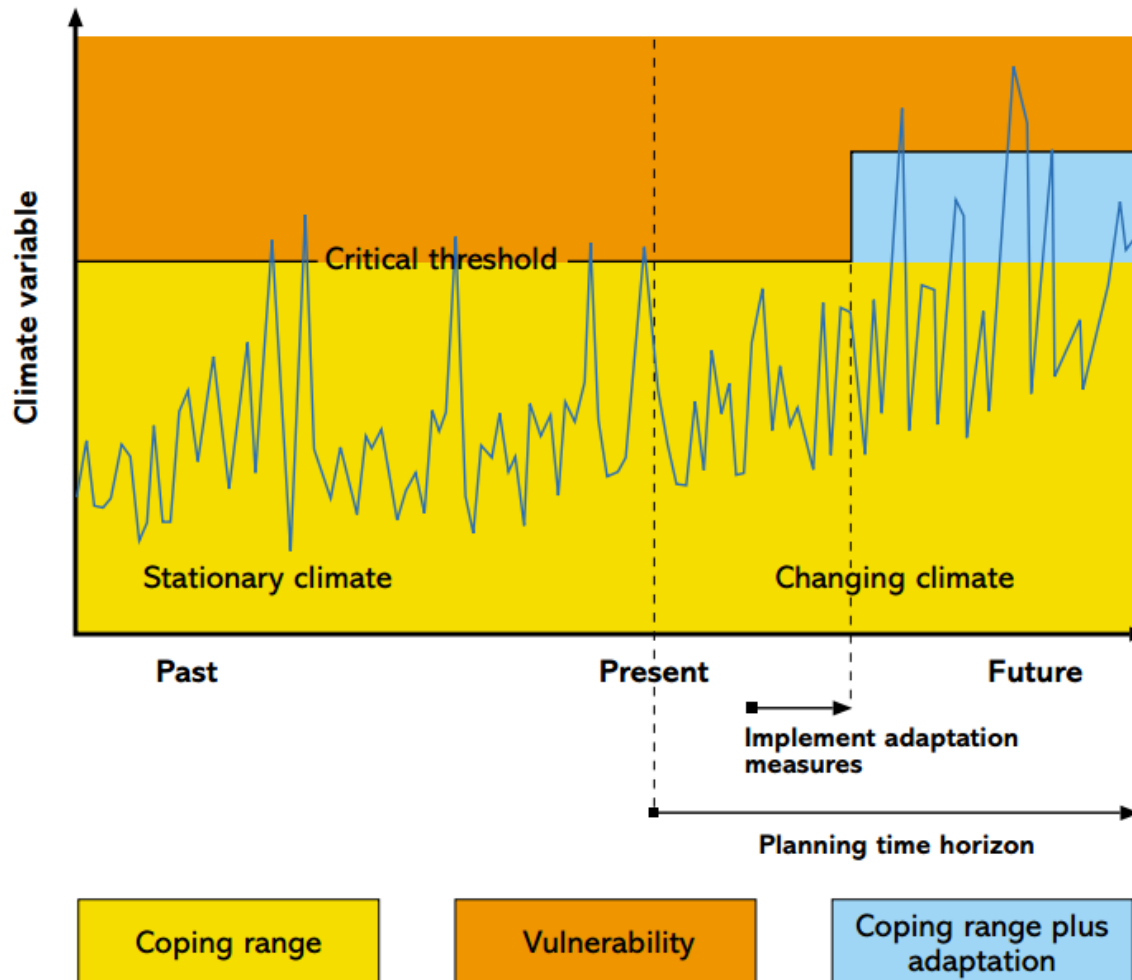
🔍 Respond to Climate Change



<Fig> Concept of Adaptation(smit et al, 1999)

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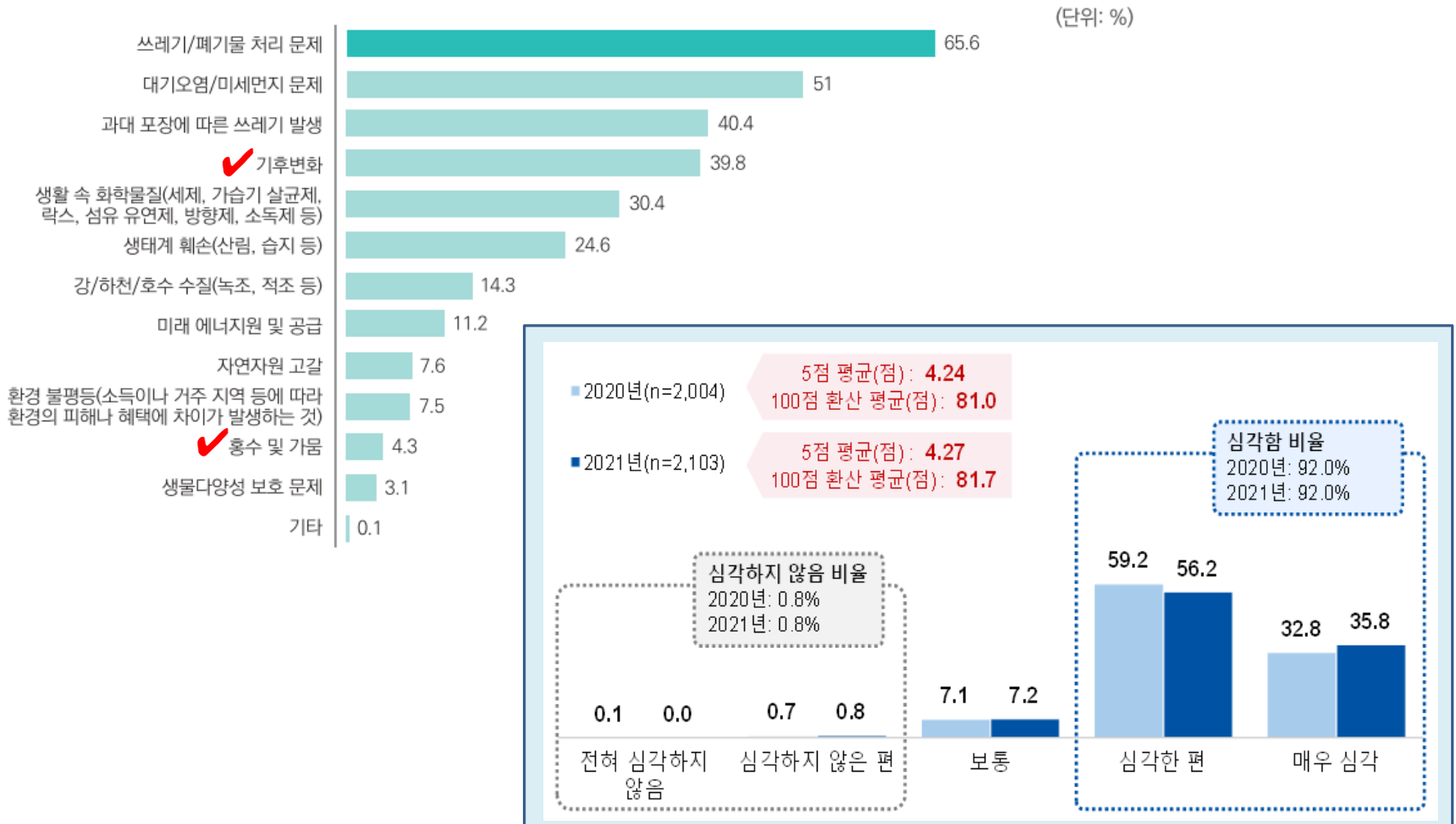
🔍 Coping Range of Adaptation



< Fig> 대응범위와 취약성, 기후변수간 관계(UKCIP, 2003)>

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그림 2. 우리나라가 직면한 가장 중요한 환경문제



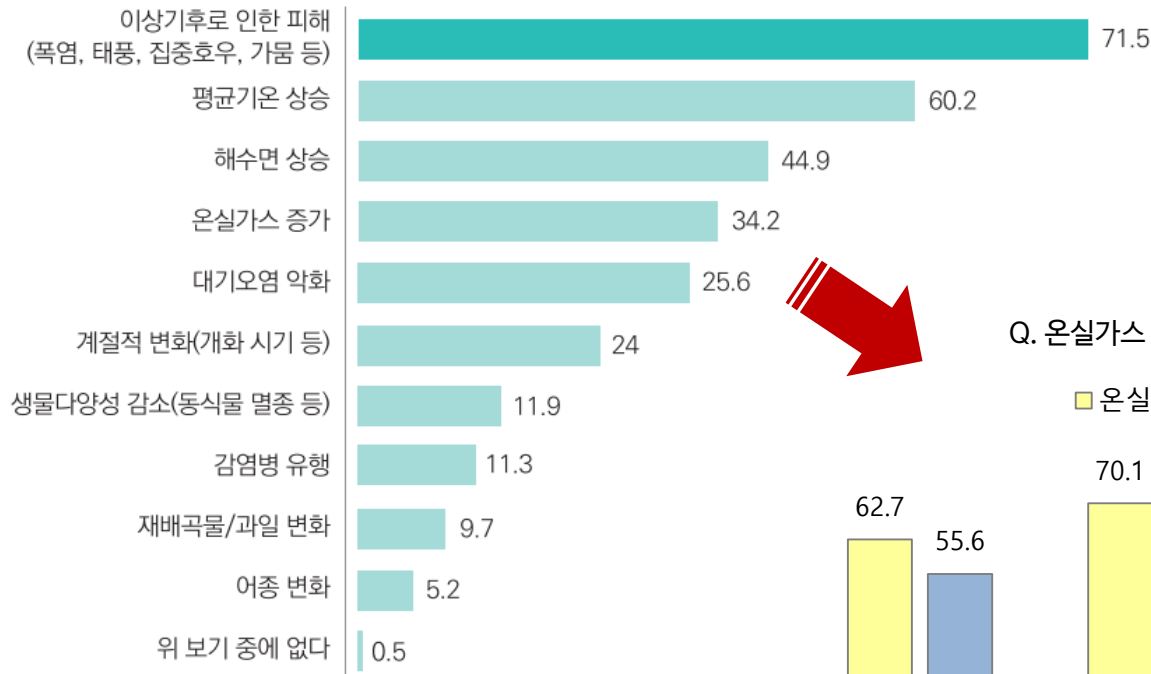
* 자료 : 2021 국민환경인식조사(염정윤 외, KEI 환경포럼 10권 1호, 2021), 2021 기후변화 적응 관련 대국민 인식조사(KEI KACCC, 2021)

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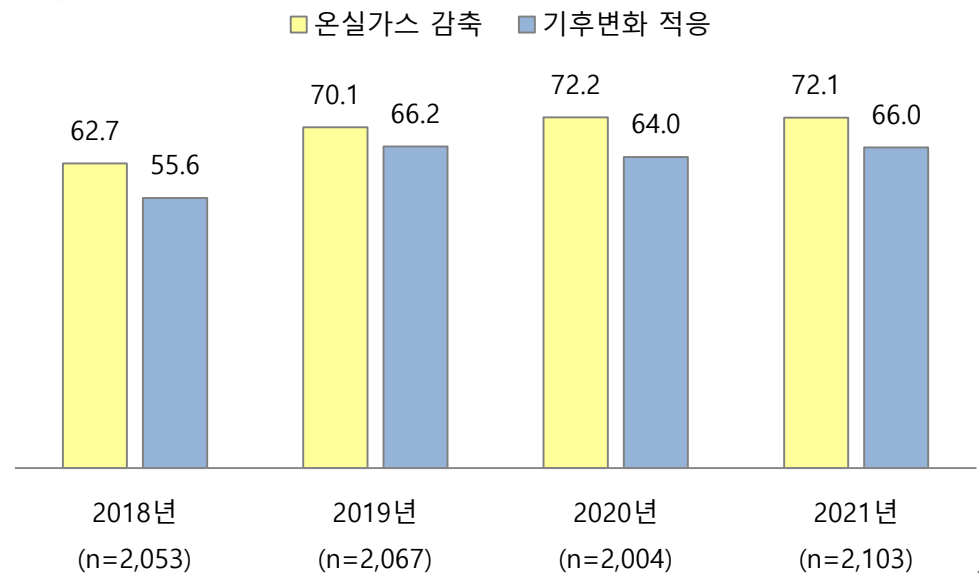
그림 4. '기후변화' 하면 떠오르는 이미지

✓ 적응 영역과 감축 영역을 구분해보세요.

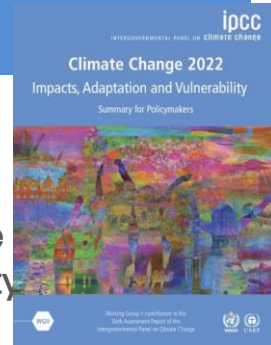
(단위: %)



Q. 온실가스 감축과 기후변화 적응 인지 비율(%)



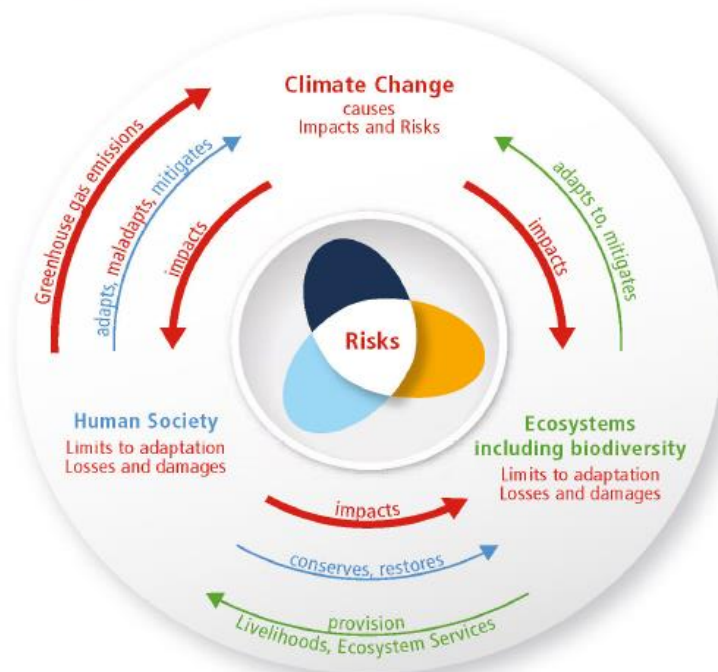
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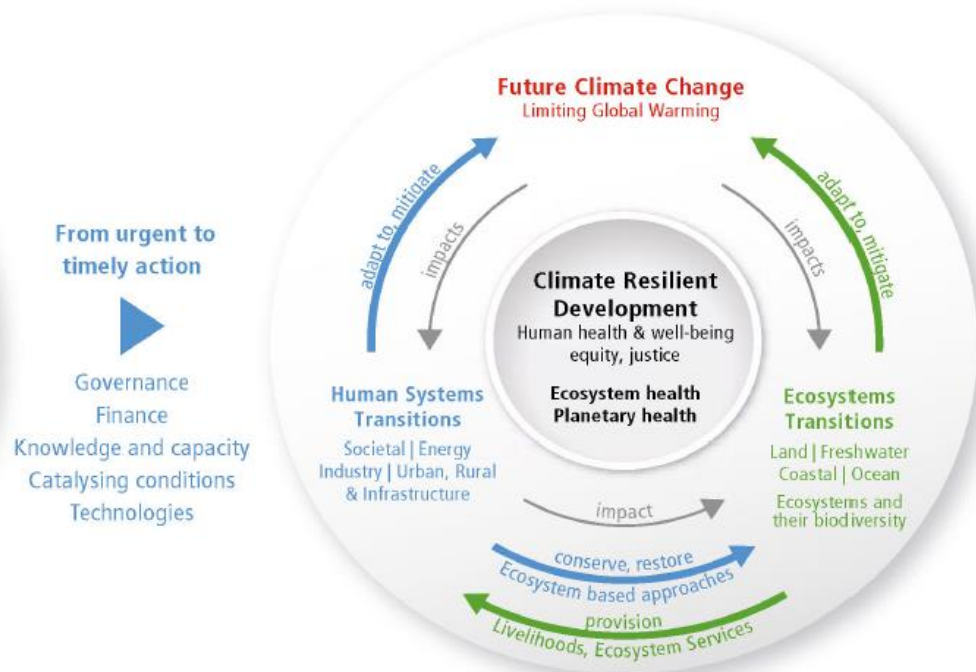
🔍 Climate Resilient Development

- From climate risk to climate resilient development : AR6 WG2 has a strong focus on the interactions among the coupled systems climate, ecosystems(including their biodiversity) and human society
- These interactions are the basis of emerging risks, at the same time, offer opportunities for the future

(a) Main interactions and trends



(b) Options to reduce climate risks and establish resilience



The risk propeller shows that risk emerges from the overlap of:



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✓ Paris Agreement, a legally binding international treaty on climate change, was adopted by 196 Parties at COP21 in Paris on 2015



- [Article 2] Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
- [Article 7] Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2

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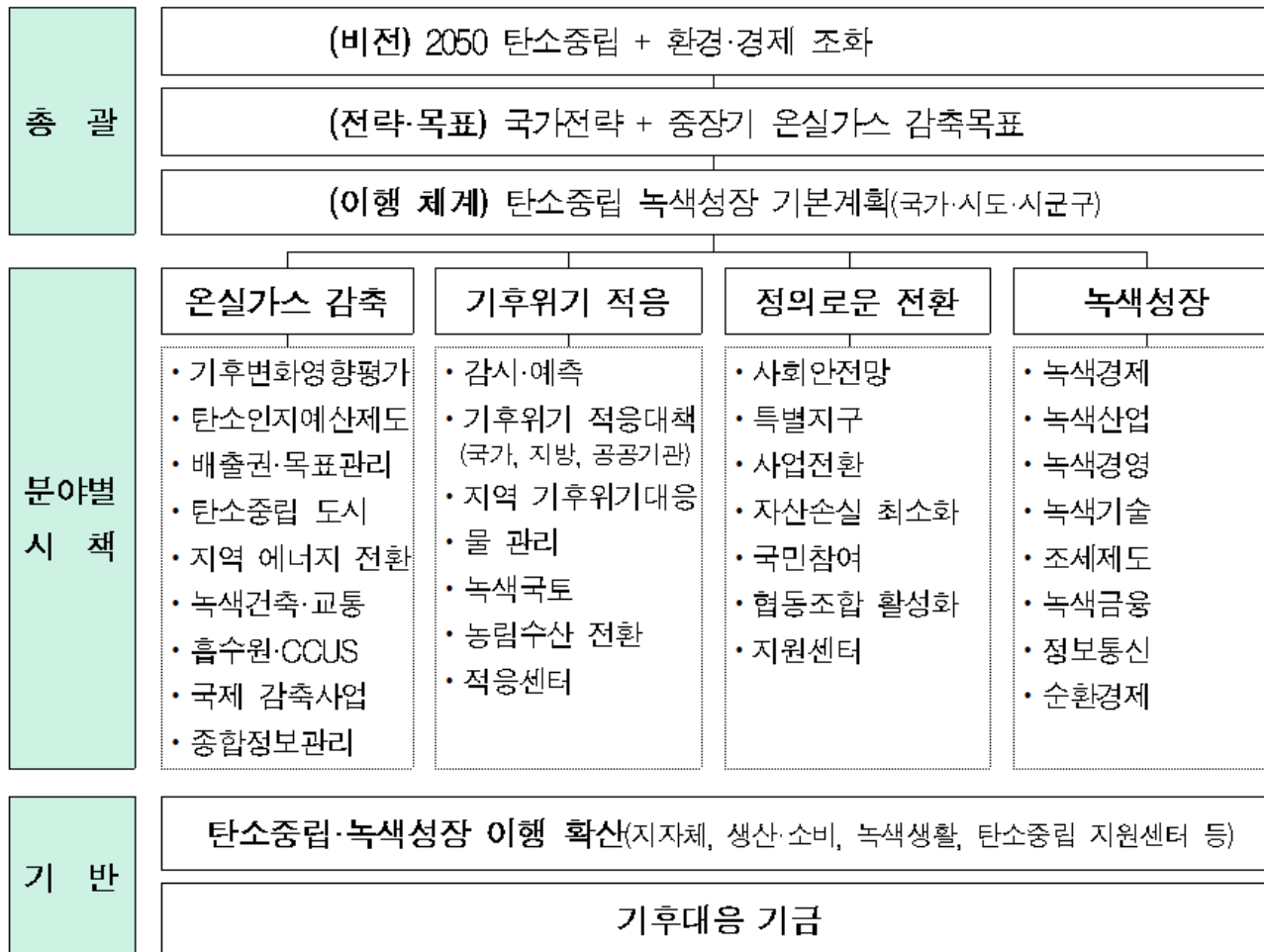
Framework Act on Carbon Neutrality and Green Growth for coping with Climate Crisis(2022.3)

- South Korea Declares Carbon-Neutral Society and Plans Climate Adaptation in 2022 : Framework Act on Carbon Neutrality and Green Growth for coping with Climate Crisis
- Structure of Framework Act : 11 Chapters and 83 Article
 - Chapter 1. General Provision
 - Chapter 2. National Vision and Greenhouse Gas Reduction Targets
 - Chapter 3. Formulation of National Framework Plan
 - Chapter 4. 2050 Carbon Neutrality and Green Growth Committee
 - Chapter 5. Greenhouse Gas Reduction Policy Measures
 - Chapter 6. Climate Crisis Adaptation Policy Measures
 - Chapter 7. Just Transition
 - Chapter 8. Policy Measures for Green Growth
 - Chapter 9. Transition to Carbon Neutral Society and Spread of Green Growth
 - Chapter 10. Establishment and Operation of Climate Response Fund
 - Chapter 11. Supplementary Provisions

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🔍 Framework Act on Carbon Neutrality and Green Growth for coping with Climate Crisis

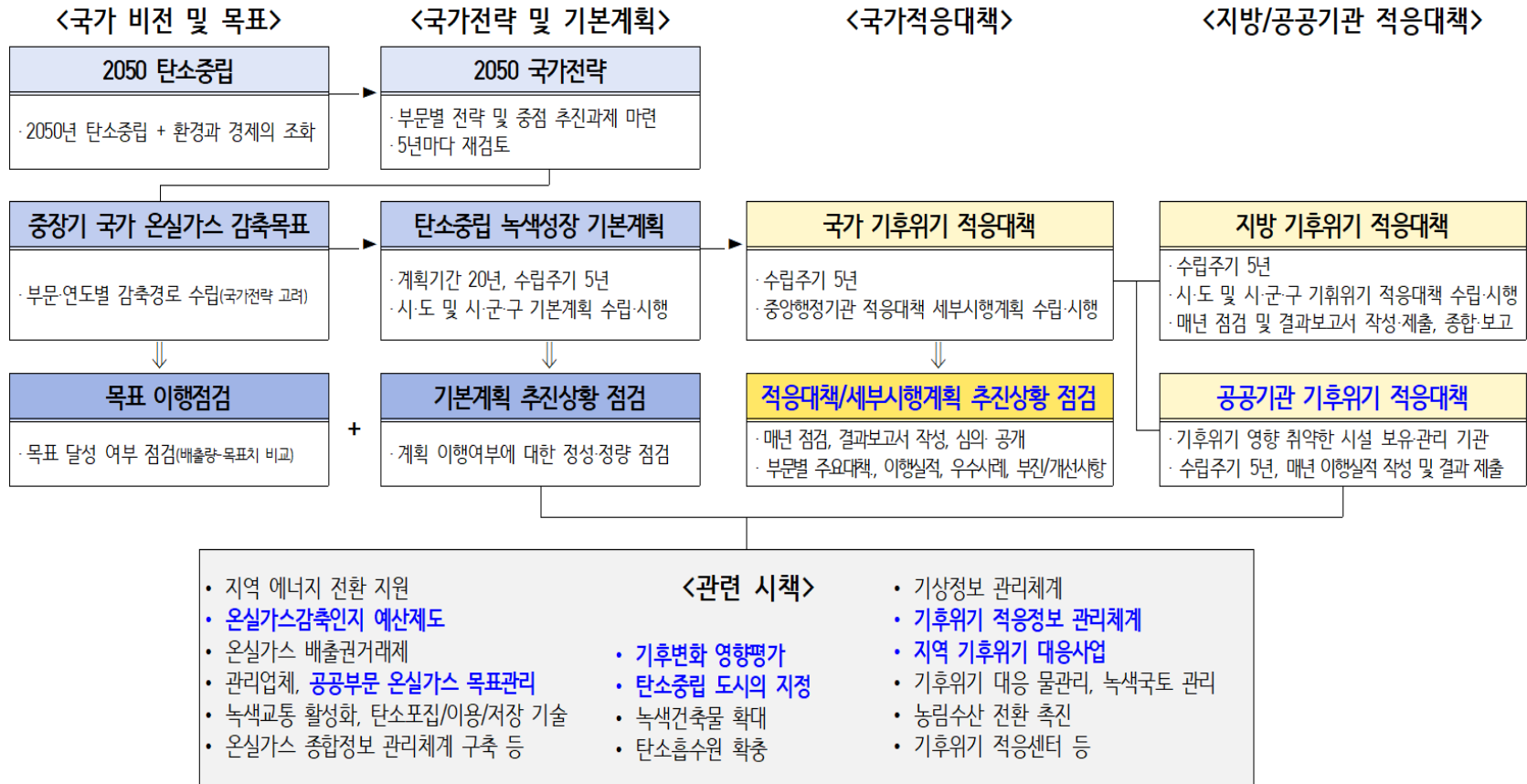
< 탄소중립·녹색성장기본법안 체계 >



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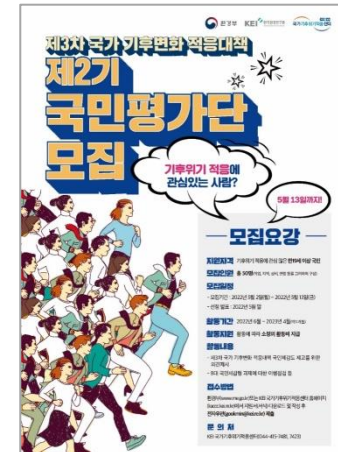
Measures for respond to Climate Crisis

- (5-years) 20-year national framework plan to achieve the national vision and the mid/long-term reduction targets
- (5-years) National Adaptation Plan / Regional Adaptation Plan/ Public Institution's Adaptation Plan



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✔ Action3. Create Stories that can Touch People



✔ Action4. Share Your Climate Knowledge



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✓ Action5. Monitor the Progress with People that you talking



국가

탄소중립(Net Zero) 실현을 위한, 정책 구축에 있어 국가 기후변화 적응에 이행점검을 중요적으로 추진하고, 국가 차원의 적응정책의 확산 및 성공 사례를 발굴하여 기후 위기 대응을 선도하고 있는 기관에서 기후변화 적응 주역자를 소개합니다.



공공기관

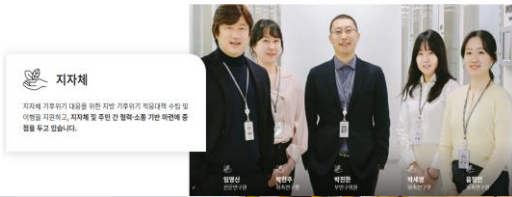
과거부터 기후위기 적응대책 수립의 첫 번째로서, 공공기관 적응 대책 수립의 제도적 안착 및 필요성 제고를 위한 기반을 마련 하고 기후 적응 실천의 대상에 교육과 적응정책 수립 및 이행을 위한 인식 제고, 역량강화 분야별 협력에 중점을 두고 기후적응 정보 공유의 장을 만들 계획입니다.



국내외 적응협력

적응센터는 2009년 설립 이래, 꾸준히 다양한 국제 네트워크를 구축하여 국제기구 및 NGO와 협력하고, 국제적으로는 중앙정부, 지방, 산업계, 공공기관, 민간 등과 기후변화 적응 협력체계를 구축하고, 기후위기 적응의 효과적 이행을 위한 협력을 더욱 강화해 나갈 계획입니다.

또 국제적으로는 적응 국제포럼을 파악하고, 국제회의 노력에 적극적으로 동참하여, 국제적으로 제기된 기후 변화 관련 기관에 영향을 줄 수 있는 제도개선 및 중요 국제기반 기후변화 협력에 대해 협력해 나갈 계획입니다.



지자체

지자체 기후위기 대응을 위한 지역 기후위기 적응대책 수립 및 이행을 지원하고, 지자체 및 주민 안전 협력 수준을 개선하는데 중점을 두고 있습니다.



과학

적응센터는 기후변화 취약성 평가 도구(VESTAP: Vulnerability Assessment Tool to Build Climate Change Adaptation Plan)를 개발하고 지자체에 제공함으로써 적응 대책 수립을 위한 과학적 분석에 필요한 예산, 시간, 인력을 절감하여 효율적인 대책 수립을 위해 지원됩니다.

또한, IPCC 보고서 및 국가별 기후 변화에 따라 개발된 공존사회 경제 경로(SSP: Shared Socioeconomic Pathways) 시나리오를 적용하여 기후변화 취약성 평가 도구를 개발하고 있습니다.



적응 교육·홍보 및 총괄지원

국가기후위기적응센터 운영, 성과 관리 및 제공, 기후변화 적응 정책 연구 및 사업 등을 포함한 기후변화 적응에 관한 국내외 이슈, 정책 동향 등을 발표하여 적응 교육에 대한 다양한 활동을 지원하고 있습니다.

또한, 적응정책의 실행을 위한 제도개선을 제고하고 다양한 대학원 참여 기회 마련을 통해 적응 이행주체의 참여 및 이행을 도모하고 있습니다.



Panel Discussion : Environment

<Transforming our World: The 2030 Agenda for SD('15.9) ⇒ SDGs>



Thank you

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<https://kaccc.kei.re.kr/home/main.do>

