

Current Status of IAM in Korea in Support of Transboundary Air Pollution Assessment Over Northeast Asia

Woo, Jung-Hun

Division of Interdisciplinary Studies, Konkuk University, Korea

December 8, 2016

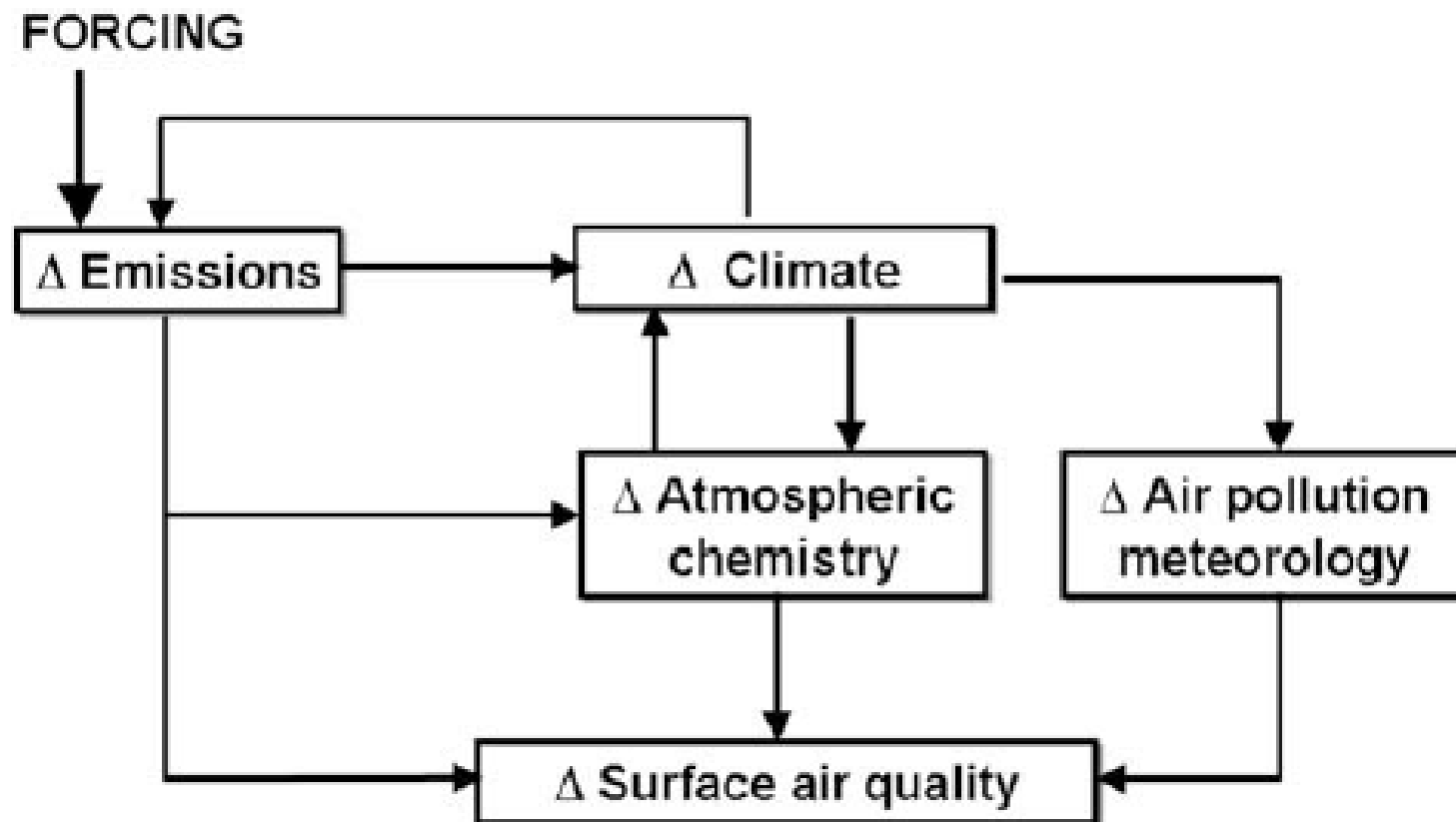
**NEASPEC Transboundary Air Pollution Project
Expert Consultation Meeting, Seoul, Korea**

Content

- 1. Present Status of TAP IAM-related work in Korea**
2. An idea on a possible collaborative framework on TAP IAM in NE Asia

Background

: Linkage between Climate Change and Air Quality



D. Jacob,
2009

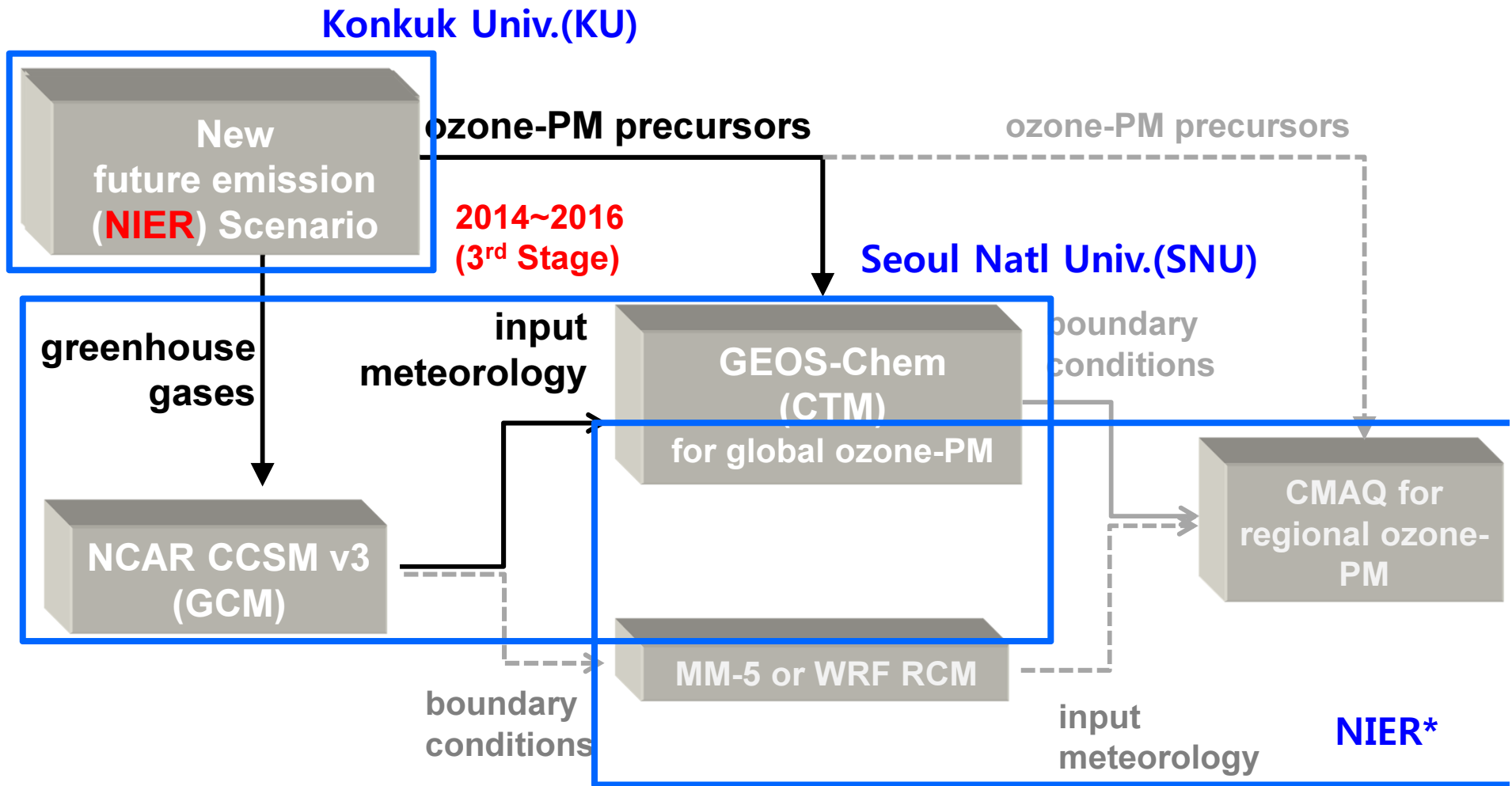
Integrated Assessment Model Development (Korea)

Title	Institute	Model	Characteristic
Integrated Environmental Strategy (IES)	• KEI-US EPA	• PAGE • CMAQ • BENMAP	• No energy model • Closed system • Optimization mode
Greenhouse Gases and Air pollutants Interaction and Synergy(GAINS)-Korea	• NIER/KU- IIASA	• GAINS - Emissions - Transport - Cost - Impact	• No energy model • Scenario mode • Linear air quality transport • Open system • Fast source apportionment • 1st admin level
Climate-Air Quality Integrated Modeling (ICAMS)	• NIER(SNU, KU) - NIES/IIASA	• MESSAGE/AIM • GEOSChem/CMAQ • BENMAP	• No policy feedback • Offline-linking (less integration) • Strong Science • Multi-domain(Global-National)

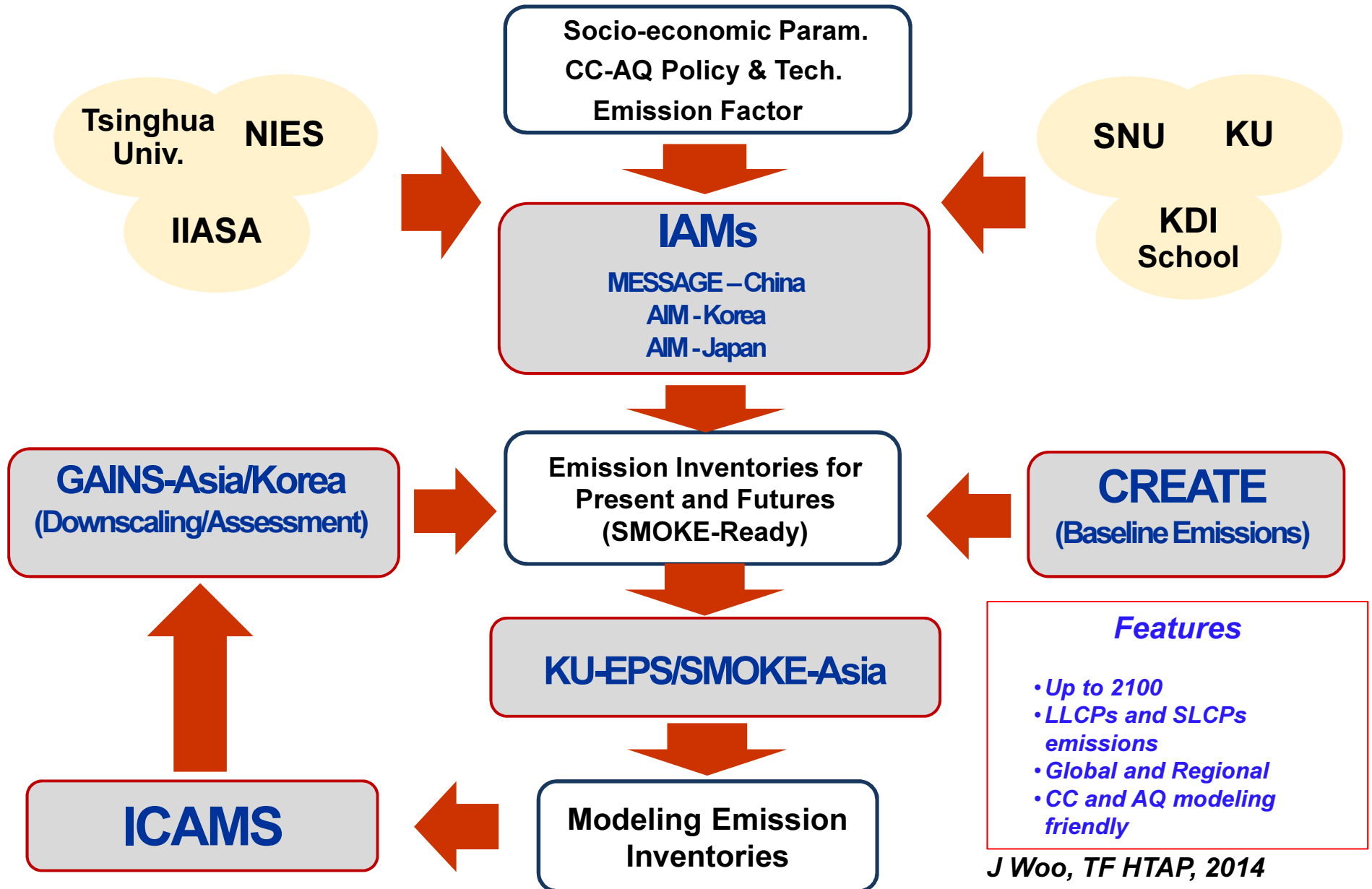
- Pros vs. Cons

ICAMS

Climate Change and Air Quality Study using NIER/SNU-ICAMS



New East Asia Future Emission Scenarios for ICAMS



mission Inventory : NIER/KU-CREATE*

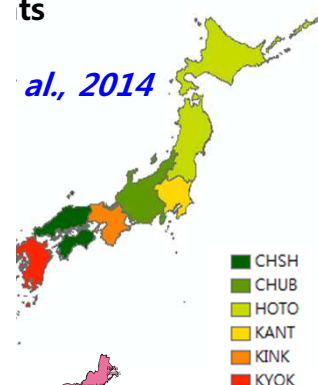
https://www.yunbaogao.cn/report/index/report?reportId=5_1886

预览已结束，完整报告链接和二维码如下：



ons for
ts

al., 2014



Region	Item	Energy														Other			
		Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other
		Waste	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas	Gas
		PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ	PJ
Beijing	Total Final Consumption	0.50	0.69	40.16	13.64	84.07	0.00	156.61	147.27	102.37	4.54	24.52	34.56	162.74	111.97				
	1. 农、林、牧、渔、水利业	0.00	0.00	0.00	0.00	0.00	0.00	2.21	0.00	2.77	0.00	0.02	0.00	0.02	0.00				
	2. 工业	0.50	0.69	40.16	13.64	84.07	0.00	9.37	0.06	16.53	4.37	1.10	34.56	26.19	111.97				
	3. 建筑业	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.27	1.71	0.15	0.00	0.00	101.71				
	4. 交通运输、仓储和邮政业	0.00	0.00	0.00	0.00	0.00	0.00	3.67	0.02	15.35	0.08	0.34	0.00	1.82	0.00				
	5. 批发、零售和住宿、餐饮业	0.00	0.00	0.00	0.00	0.00	0.00	19.81	147.06	54.92	0.06	0.27	0.00	10.68	0.00				
	6. 居民生活	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.00	1.17	0.01	9.38	0.00	17.39	0.00				
Tianjin	Total Final Consumption	0.00	0.00	247.00	8.70	177.87	7.10	77.57	8.93	129.48	38.19	9.29	12.72	65.64	90.90				
	1. 农、林、牧、渔、水利业	0.00	0.00	0.00	0.00	0.00	0.00	2.38	0.00	7.96	0.00	0.00	0.00	0.00	0.07				
	2. 工业	0.00	0.00	247.00	8.70	177.87	7.10	5.35	0.35	18.57	9.02	2.36	12.72	35.96	90.75				
	3. 建筑业	0.00	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
	4. 交通运输、仓储和邮政业	0.00	0.00	0.00	0.00	0.00	0.00	4.21	0.25	23.28	0.75	0.04	0.00	0.00	0.09				
	5. 批发、零售和住宿、餐饮业	0.00	0.00	0.00	0.00	0.00	0.00	26.01	7.24	45.41	29.07	0.01	0.00	0.55	0.00				
	6. 居民生活	0.00	0.00	0.00	0.00	0.00	0.00	4.30	1.03	9.98	0.35	2.45	0.00	11.45	0.00				

GAINS CHINA

Greenhouse Gas - Air

Logout Glossary Activity Data Emissions Costs Air Quality & Impacts Scenario Management Data Management

Scenario Management Manage Emission Scenarios

Scenarios View Structure of Emission Scenarios

This option allows you to edit, import, define, and delete emission scenarios u

1. Emission Inventory : Improve GAINS-Asia emissions using updated national data, MEGAN/BlueSky emissions model
2. Year 2009/2010, Asia regions, ~300 source categories
3. Pollutants: CO₂, CH₄, NO_x, N₂O, PM₁₀, PM_{2.5}, SO₂, VOC, NH₃, CO, BC, OC, Mercury
4. Anthropogenic, Biogenic, Biomass burning
5. Emissions processing friendly