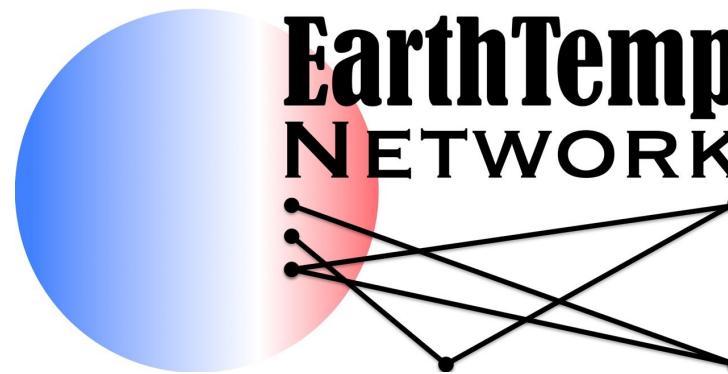


Taking the Temperature of Earth: Steps towards Integrated Understanding of Variability and Change



Steering Group: Christopher J. Merchant,
Nick Rayner, John Remedios, Jacob L. Høyer,
Philip D. Jones, Folke Olesen, Hervé Roquet,
José Sobrino, Peter Thorne

Presentation: Stephan Matthiesen

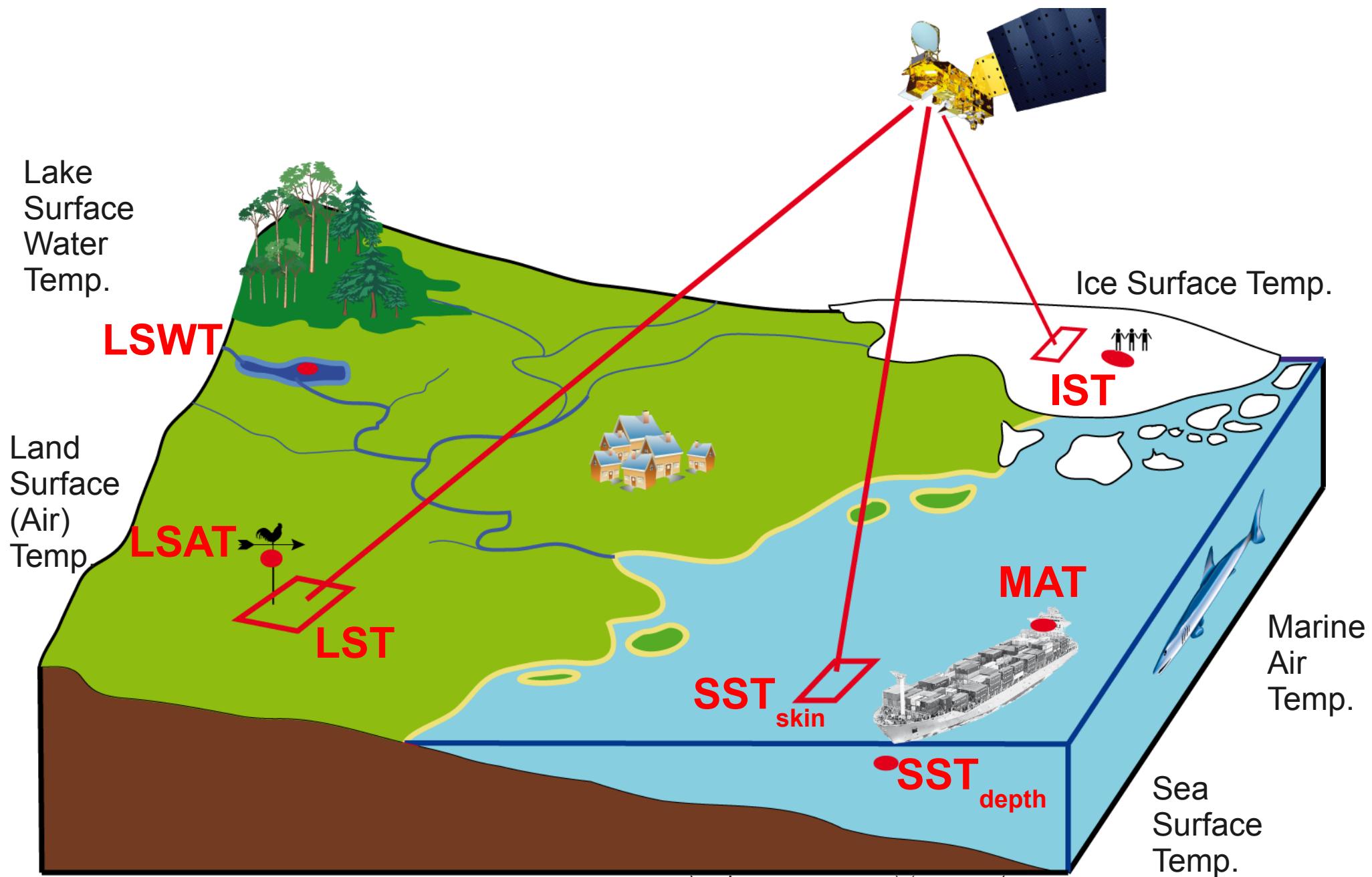
The EarthTemp Network

www.EarthTemp.net

- Stimulate new international collaboration in measuring and understanding the surface temperatures (STs) of Earth
- Workshop (2012) identified needs for progress towards societal needs: 10 Recommendations

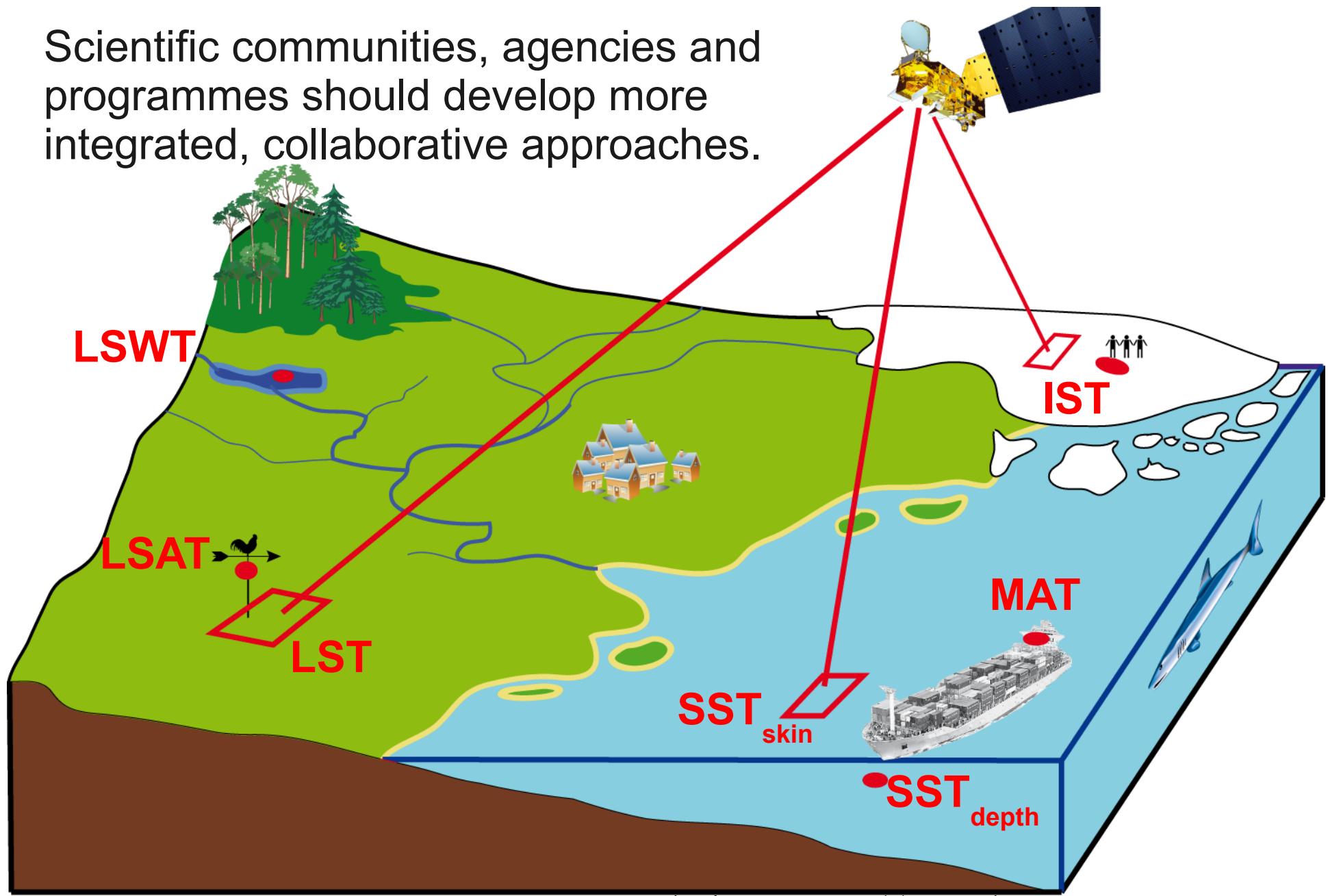


1. A whole-Earth perspective

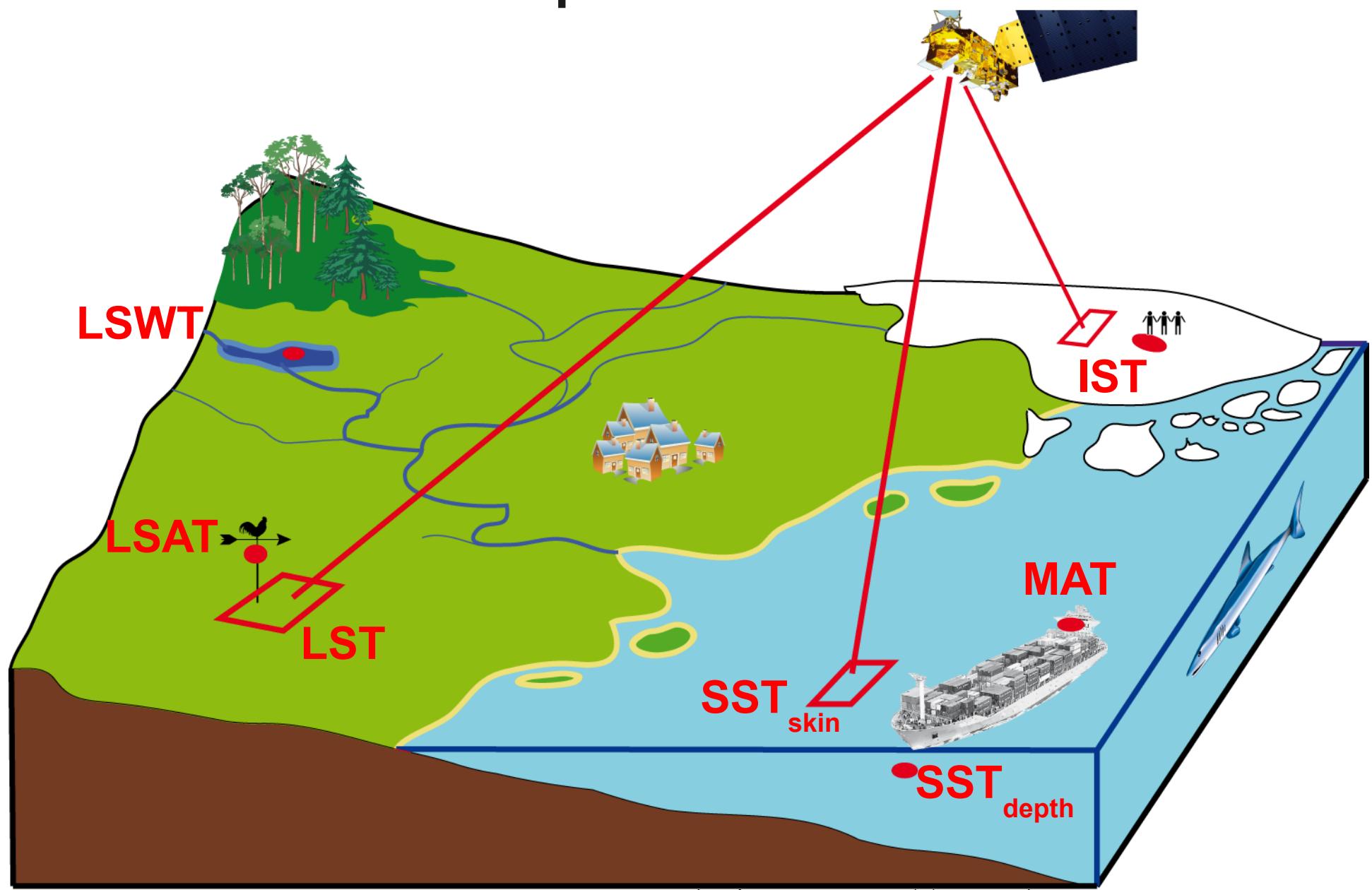


1. A whole-Earth perspective

Scientific communities, agencies and programmes should develop more integrated, collaborative approaches.



2. Build understanding of relationships of different STs

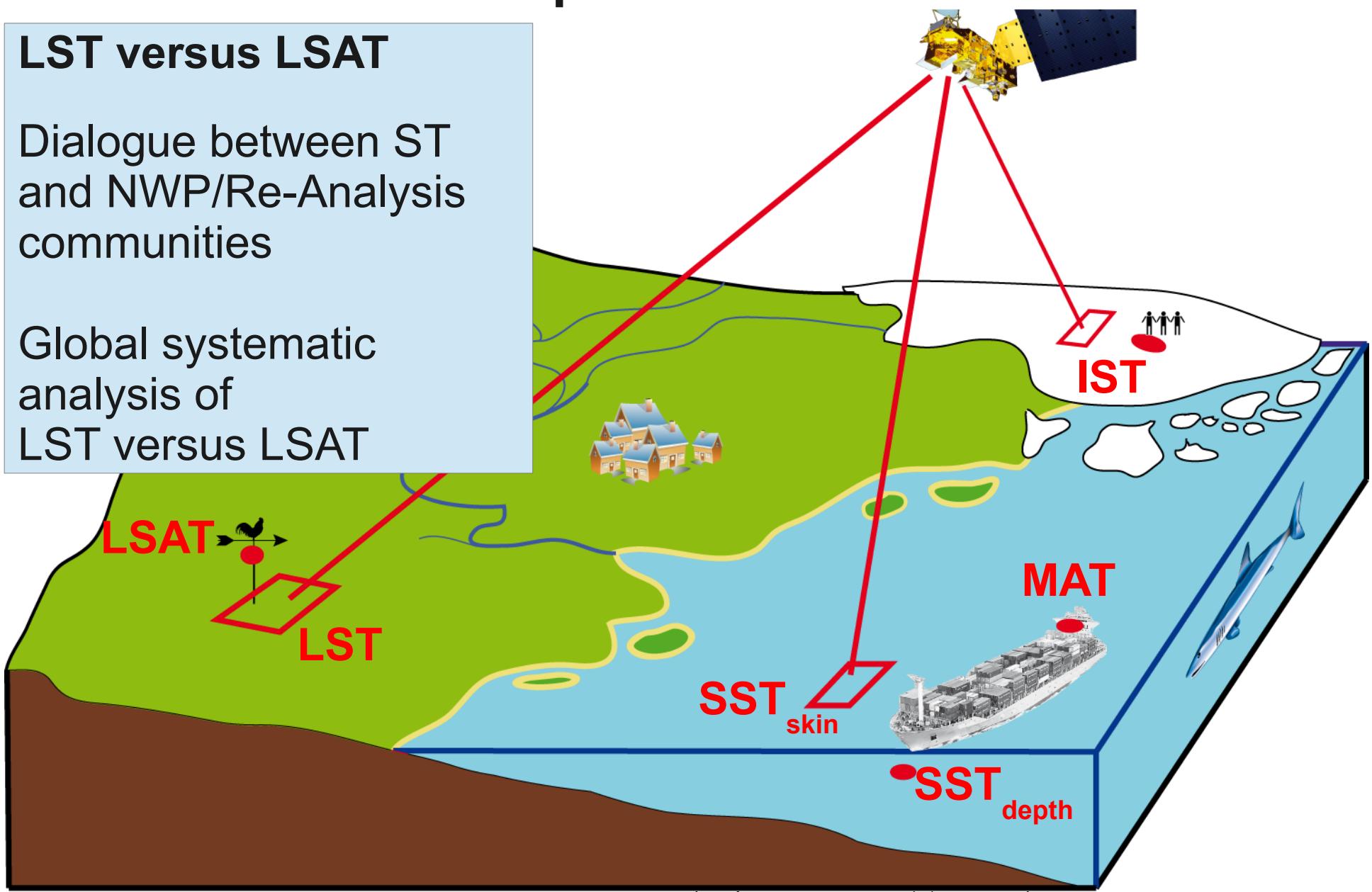


2. Build understanding of relationships of different STs

LST versus LSAT

Dialogue between ST and NWP/Re-Analysis communities

Global systematic analysis of LST versus LSAT

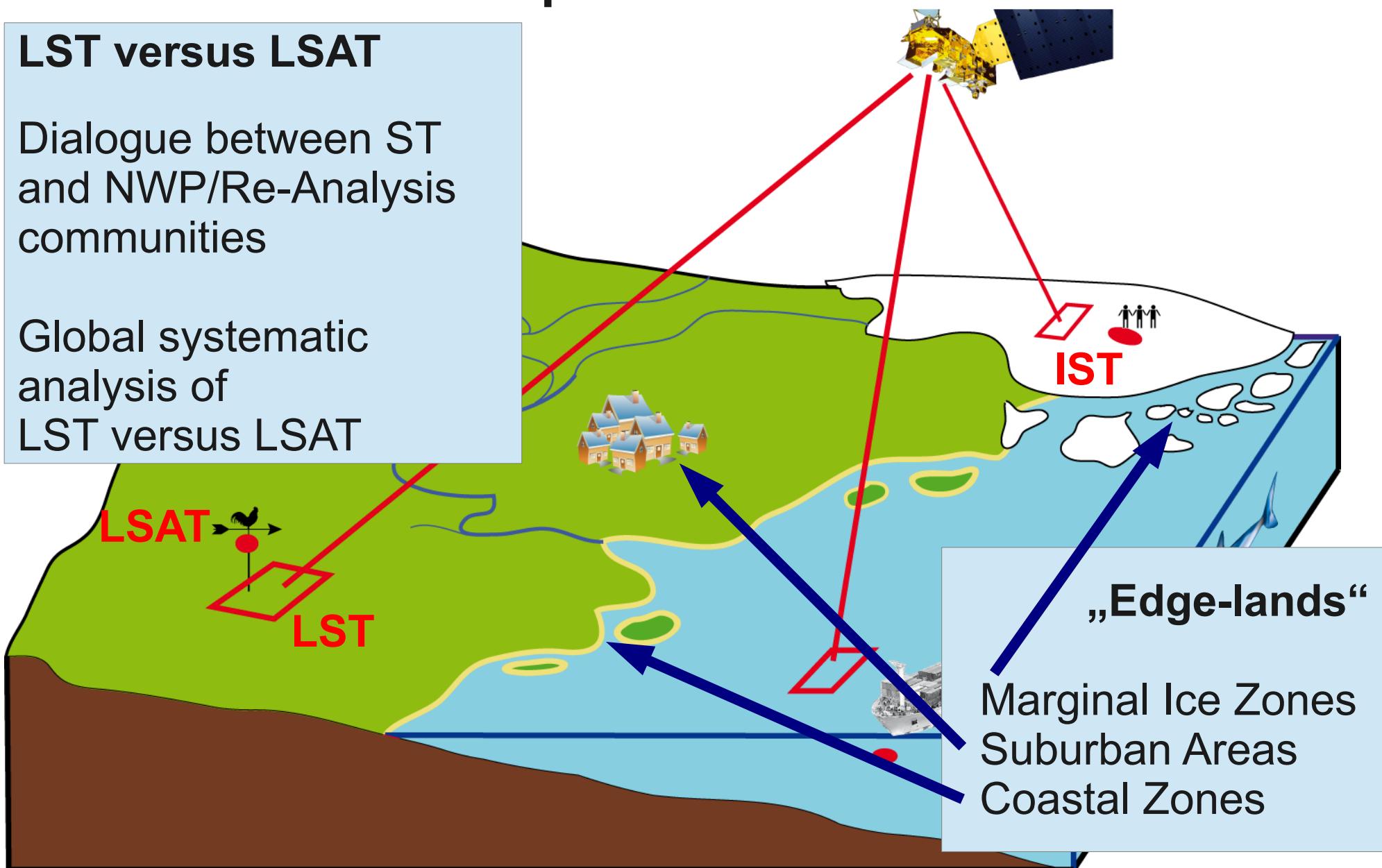


2. Build understanding of relationships of different STs

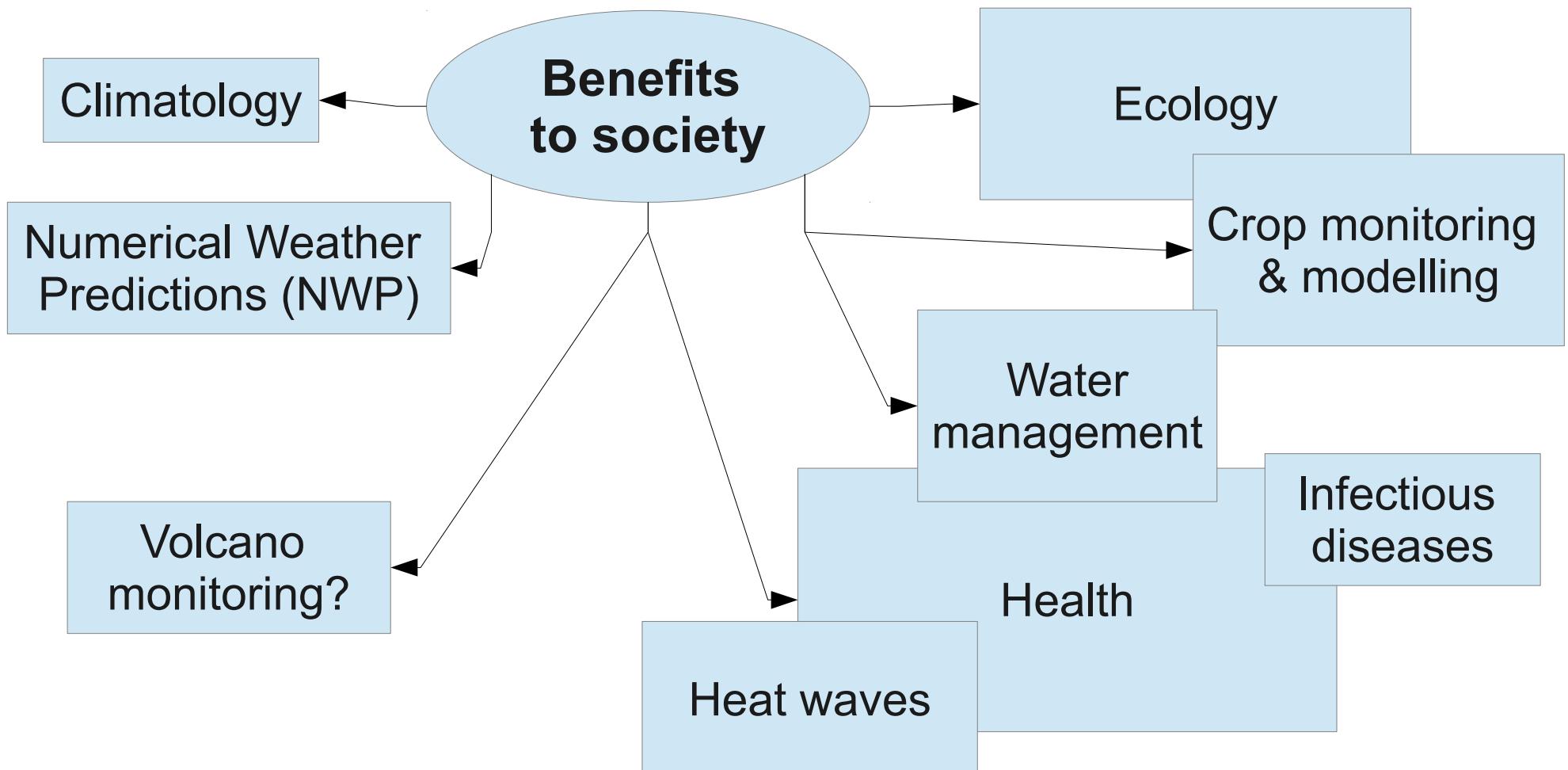
LST versus LSAT

Dialogue between ST and NWP/Re-Analysis communities

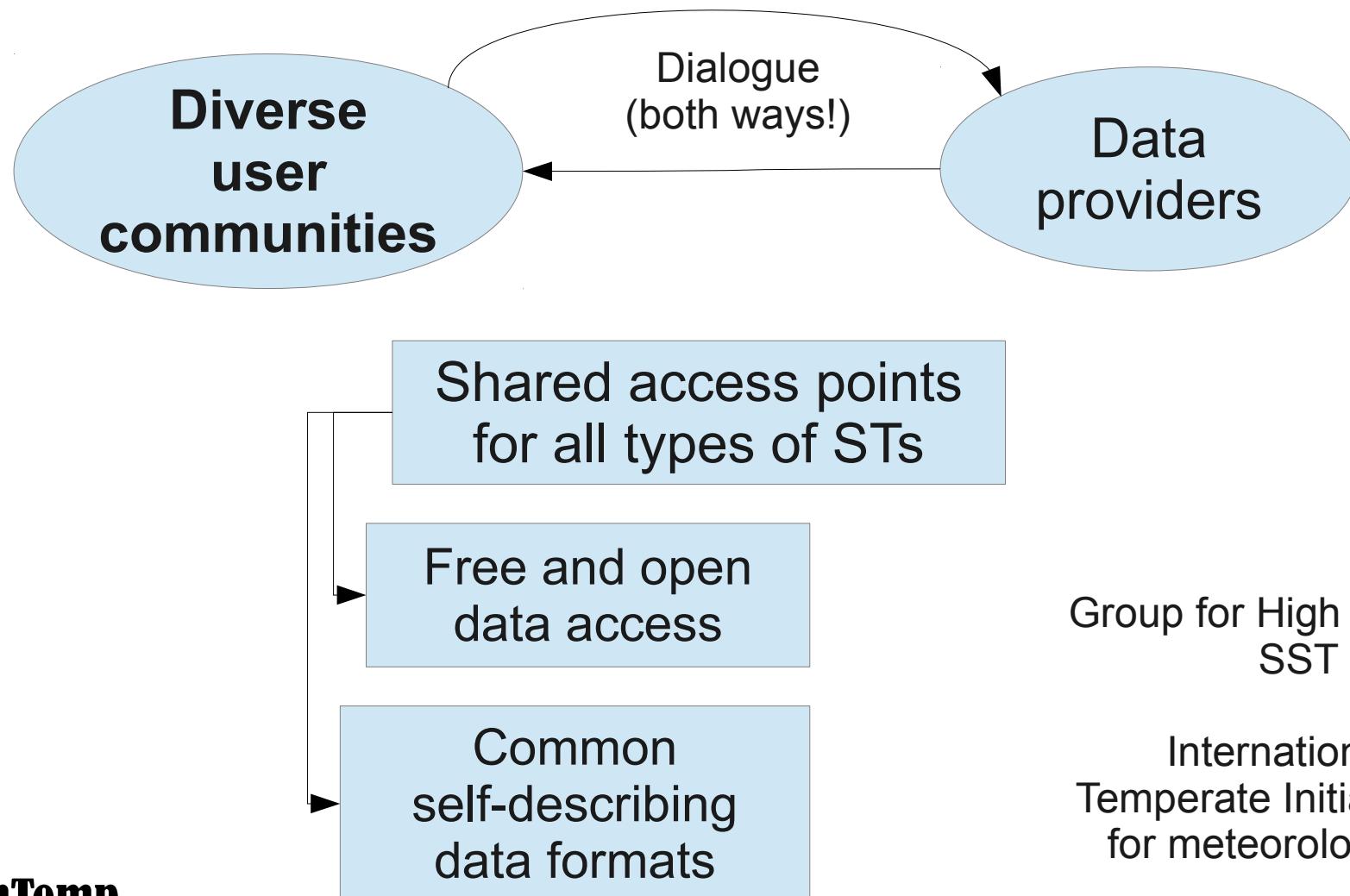
Global systematic analysis of LST versus LSAT



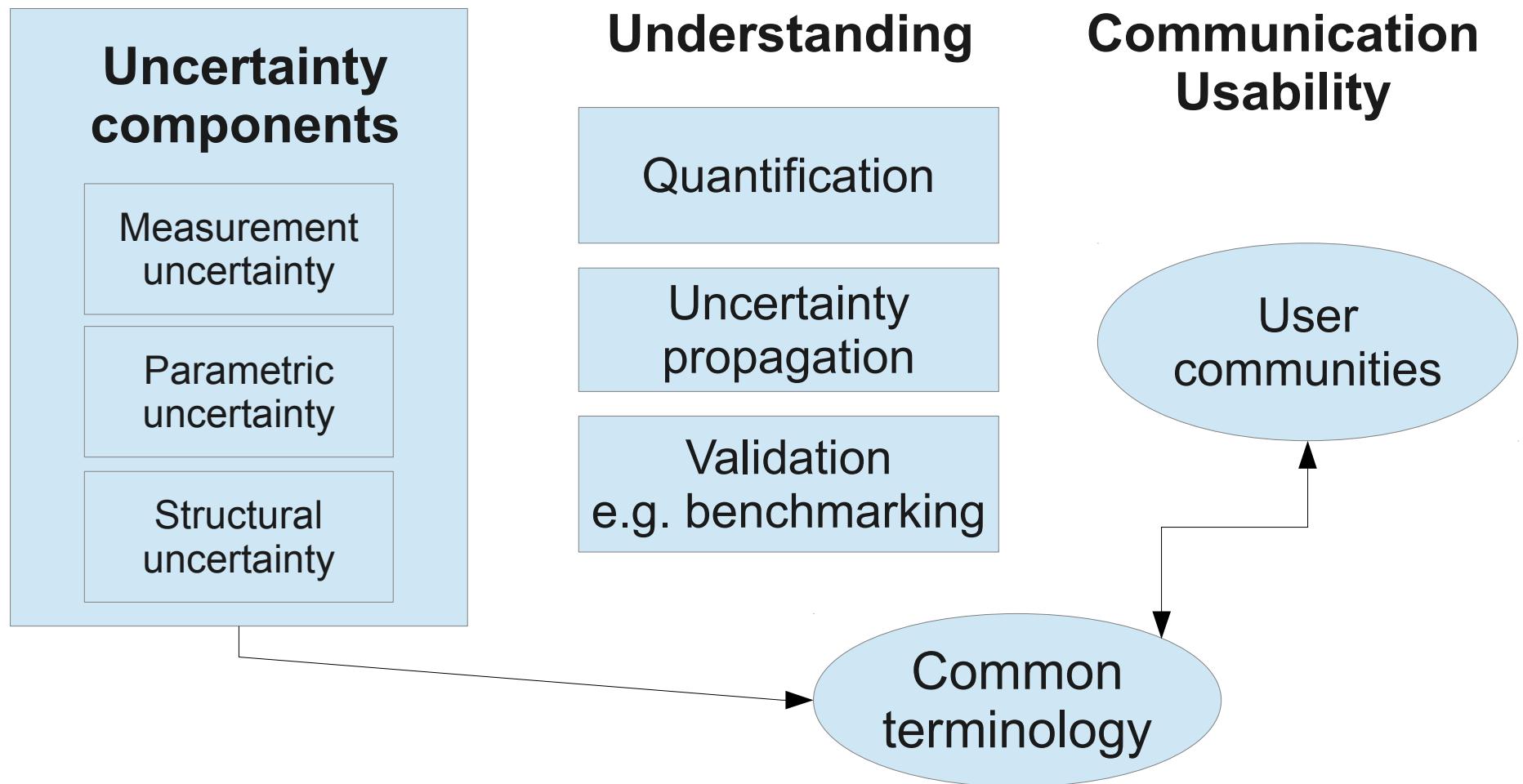
3. Demonstrate new underpinning applications of various ST data



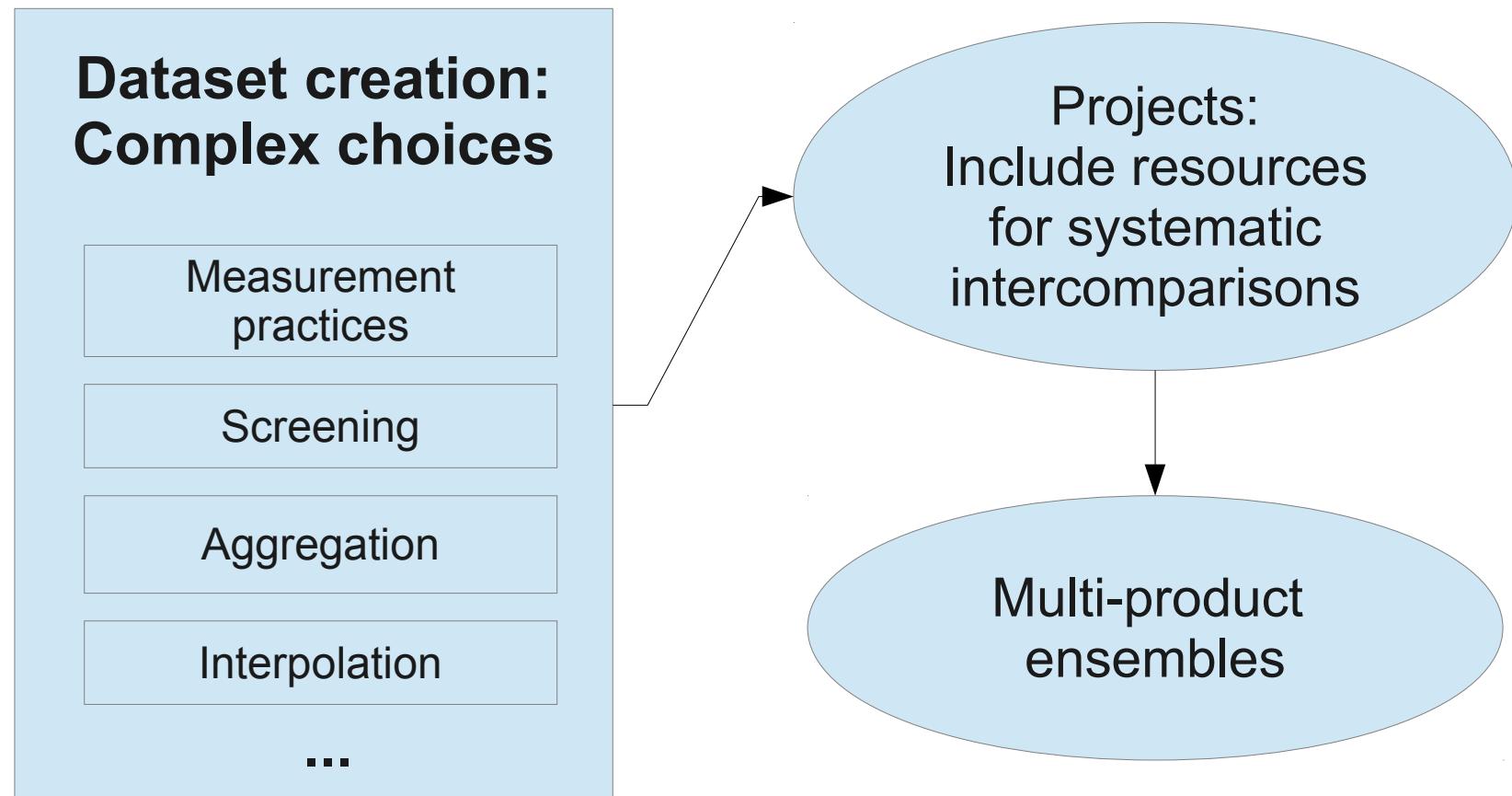
4. Make ST datasets easier to obtain & exploit for users



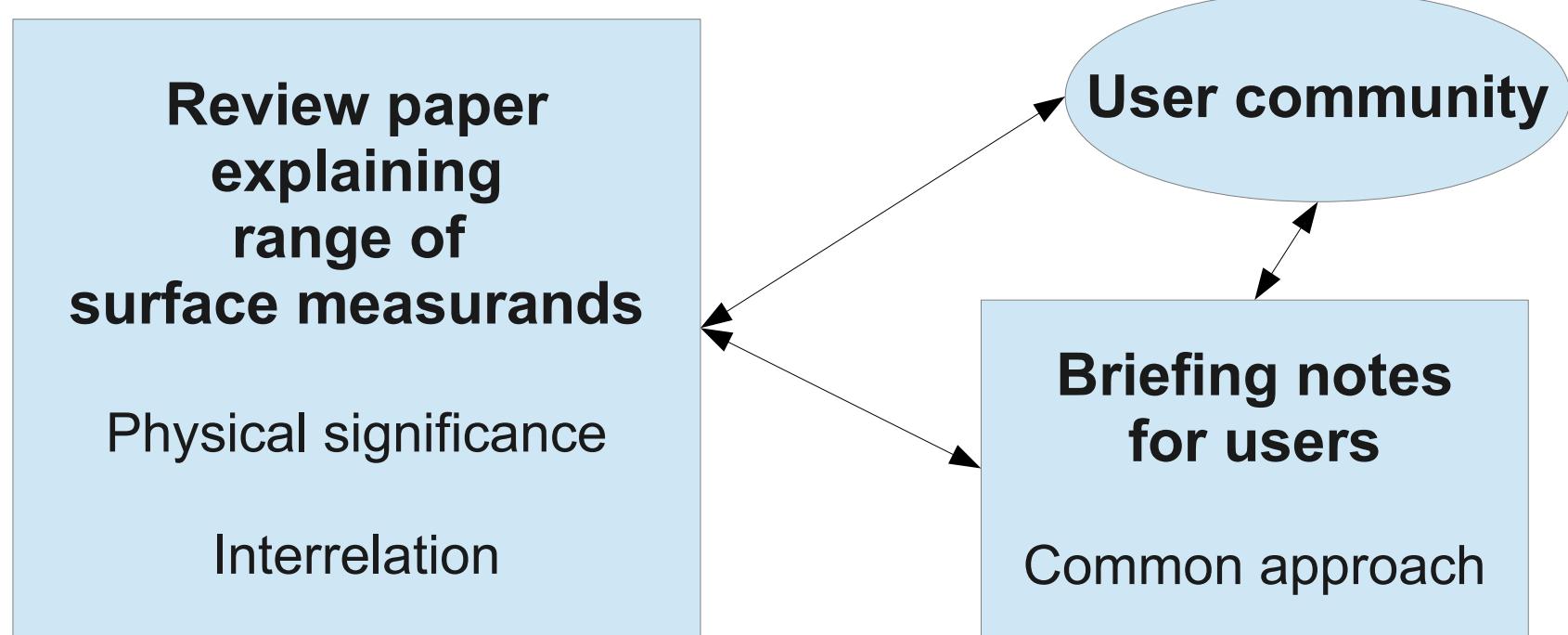
5. Provide consistently realistic uncertainty information



6. Large-scale systematic intercomparisons of ST datasets



7. Communicate differences and complementarities in readily understood terms



8. Rescue, curate and make available valuable datasets

Días del año.	Termómetro libre.		Máx. y min.		Lluvia.		Nubes.			Vientos.			Barómetro.			Psicrómetro.	
	7 m.	21.	Máxima.	Mínima.	Hora del fin.	Hora del fin.	A las 7 de la m.	A las 2 de la t.	A las 9 de la n.	A 7 m.	A s.t.	A g.n.	Altura observada.	Termom. fijo.	Altura reducida a 0°	Humedad relativa.	
1	16.0	17.7	15.5	15.0	1.2	2.2	7.8	10.2	14								
2	18.4	19.6	16.16.	16.	2.2	1.5.	8.2										
3	11.3	18.6	19.12.	12.3	2.1.	11.9.											
4	8.5	19.2	15.2	14.3	19.9	8.1	11.8										
5	10.3	18.9	15.1	15.	1.6	9.8	9.8										
6																	
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10																	
11																	
12																	
13																	
14	7.1	18.2	14.4	13.9	1.1	7.8	2.8	3									
15	9.3	17.8	12.9	13.5	8.	2.	9.9	1									
16	8.1	16.9	15.5	14.2	-	14.3	0.6	10.9									
17	2.6	11.1	12.3	10.5	7.9	2.6	15.3										
18	6.6	11.0	12.6	12.9	17.	6.5	12.5										
19	6.1	16.6	16.9	11.2	17.	6.	11.										
20	4.9	16.2	14.3	10.7	17.	4.5	12.5										
21	4.6	12.1	12.2	11.1	11.8	4.4	13.1	19.15									
22	6.	11.8	9.2	9.	12.3	6.	6.5										
23	4.4	14.	9.6	9.2	14.2	4.	10.2										
24	2.2	11.2	11.9	10.7	11.6	3.	14.6										
25	0.7	11.4	11.3	10.4	11.8	0.	11.3										
26	4.6	9.1	12.2	12.9	11.1	11.9	14.6	12.2									
27	4.6	9.1	12.2	12.9	11.1	11.9	14.6	12.2									
28	4.6	9.1	12.2	12.9	11.1	11.9	14.6	12.2									
29	3.4	18.	11.8	12.7	19.9	3.8.	10.3										
30	6.	12.2	11.6	11.6	11.8	5.	11.2										
31	5.9	11.6	12.1	19.1	5.9	12.2											
Sumas	168.1	175.2	152.8	152.8	152.8	152.8	152.8	152.8									
	mm	2															



Historical
meteorological data

8. Rescue, curate and make available valuable datasets

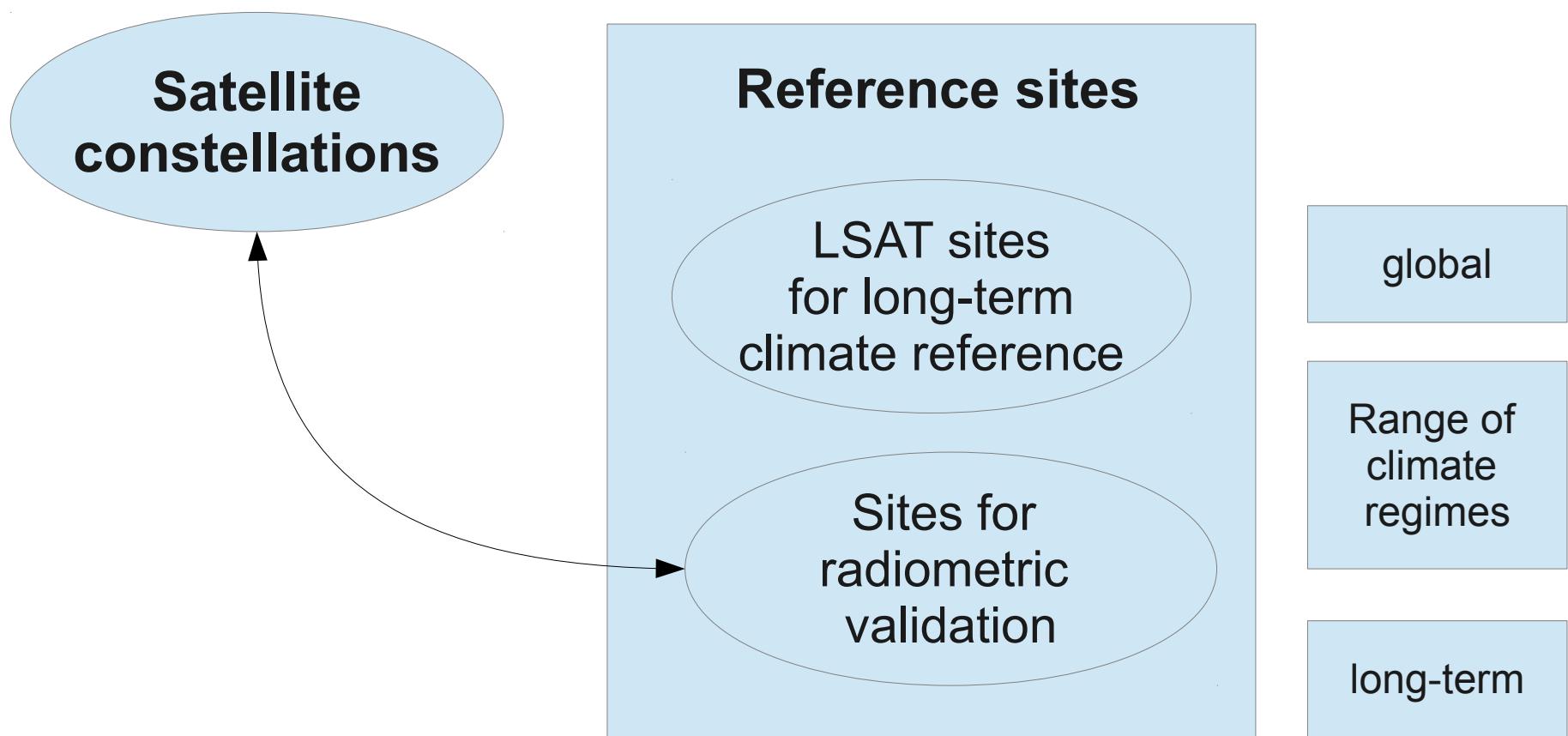
Días del año.	Termómetro libre.		Máx. y min.		Lluvia.		Nubes.																		
	7 m.	2 m.	Máxima.	Mínima.	Ostension.	Hora del amanecer.	Hora del fin.	Altura de la lluvia en milímetros.	Cantidad.	A las 7 de la m.	Especie.	Velocidad.	Dirección.	Cantidad.	A las 2 de la t.	Especie.	Velocidad.	Dirección.	Cantidad.	A las 9 de la n.	Especie.	Velocidad.	Dirección.	Cantidad.	
1	16.0	17.7	15.5	15.0	1.2	2.2	2.8	10.4																	
2	18.4	19.6	16.16.	16.	2.2	2.15.	2.2	8.2																	
3	11.3	18.6	19.12.	12.3	2.0.	11.	9.																		
4	8.5	19.2	15.2	14.3	1.9.	1.9.9	8.1	11.8																	
5	10.3	18.9	15.1	15.	1.9.	6.9.	8.8	9.8																	
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Sumas																									

Historical meteorological data



Temperature data from intense research campaigns

9. Maintain and develop observing systems for STs



10. Broad range capacity building

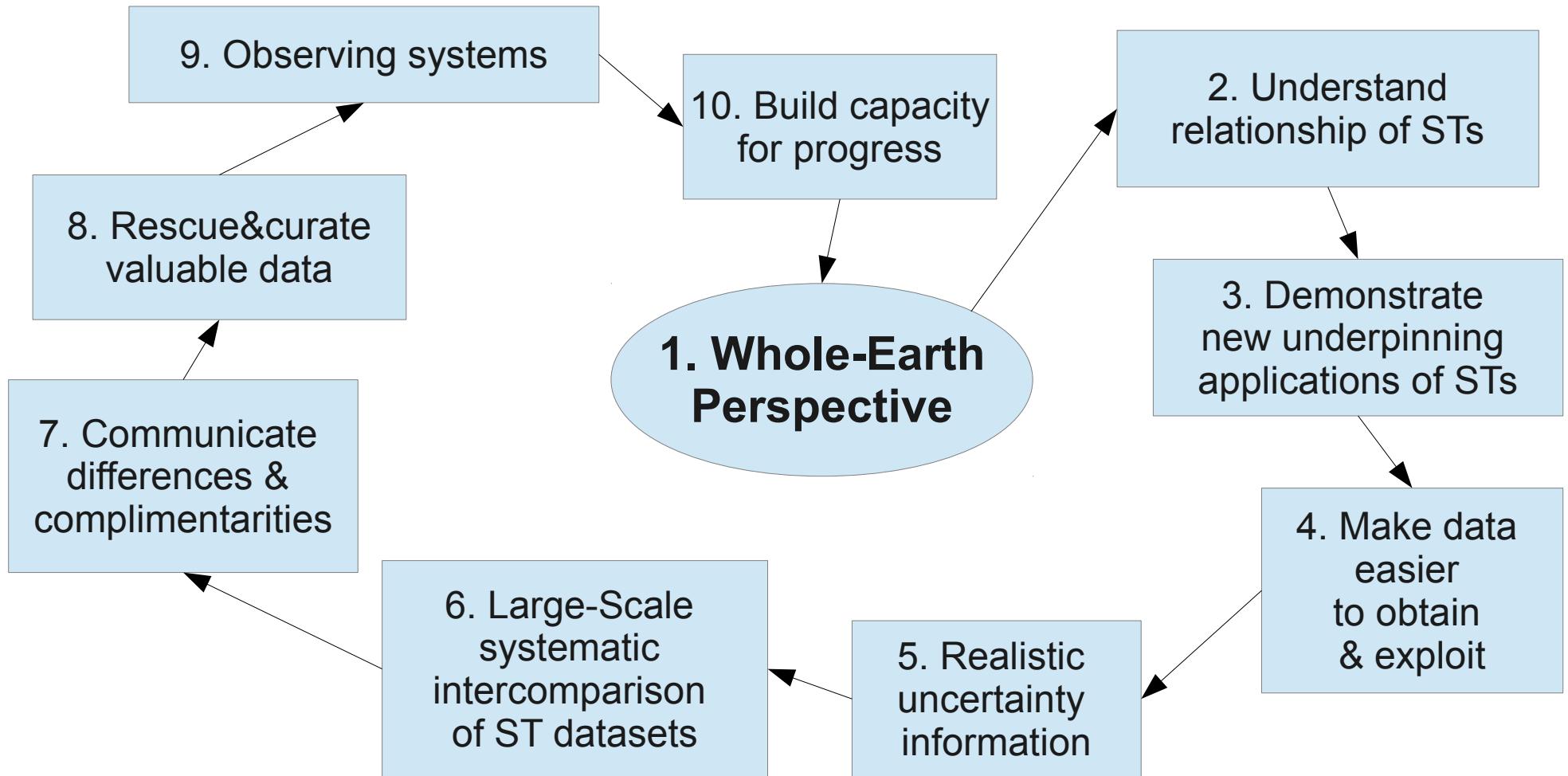
- Radiative transfer modelling
- Multi-sensor matchup techniques



The Surface Temperatures of Earth
Stephan Matthiesen et al. (Stephan.Matthiesen@ed.ac.uk)

EGU General Assembly
Vienna, 9 April 2013

Steps towards integrated understanding of STs



EarthTemp Annual Themes

- 2012: Temperature Variability and change across all Domains
- 2013: Extreme regions (focus on high-latitude)

Workshop: Characterising surface temperatures in data-sparse and extreme regions (with focus on high-latitude domains)

12 - 14 June 2013, Copenhagen

See www.EarthTemp.net for details

- 2014: Key land regions (Africa focus)



Steps towards integrated understanding of STs

