

# An independent view of government action

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**Committee on Climate Change**

*Cost-effective Water Management for New Developments*

*18<sup>th</sup> October 2016*



@theCCcuk #UKClimateRisk

The role of the Adaptation Sub-Committee of the Committee on Climate Change

Climate change and surface water flood risk

Policies and responsibility for surface water management in England

Impacts of policies on surface water flooding

Next steps

## Statutory roles under the Climate Change Act 2008:

- **To provide advice to Government on the Climate Change Risk Assessment (advisory role)**
- **To report to Parliament on progress by the National Adaptation Programme (scrutiny role)**



Prof Lord John  
Krebs (chair)

Sir Graham  
Wynne



Ece  
Ozdemiroglou

Rosalyn  
Schofield

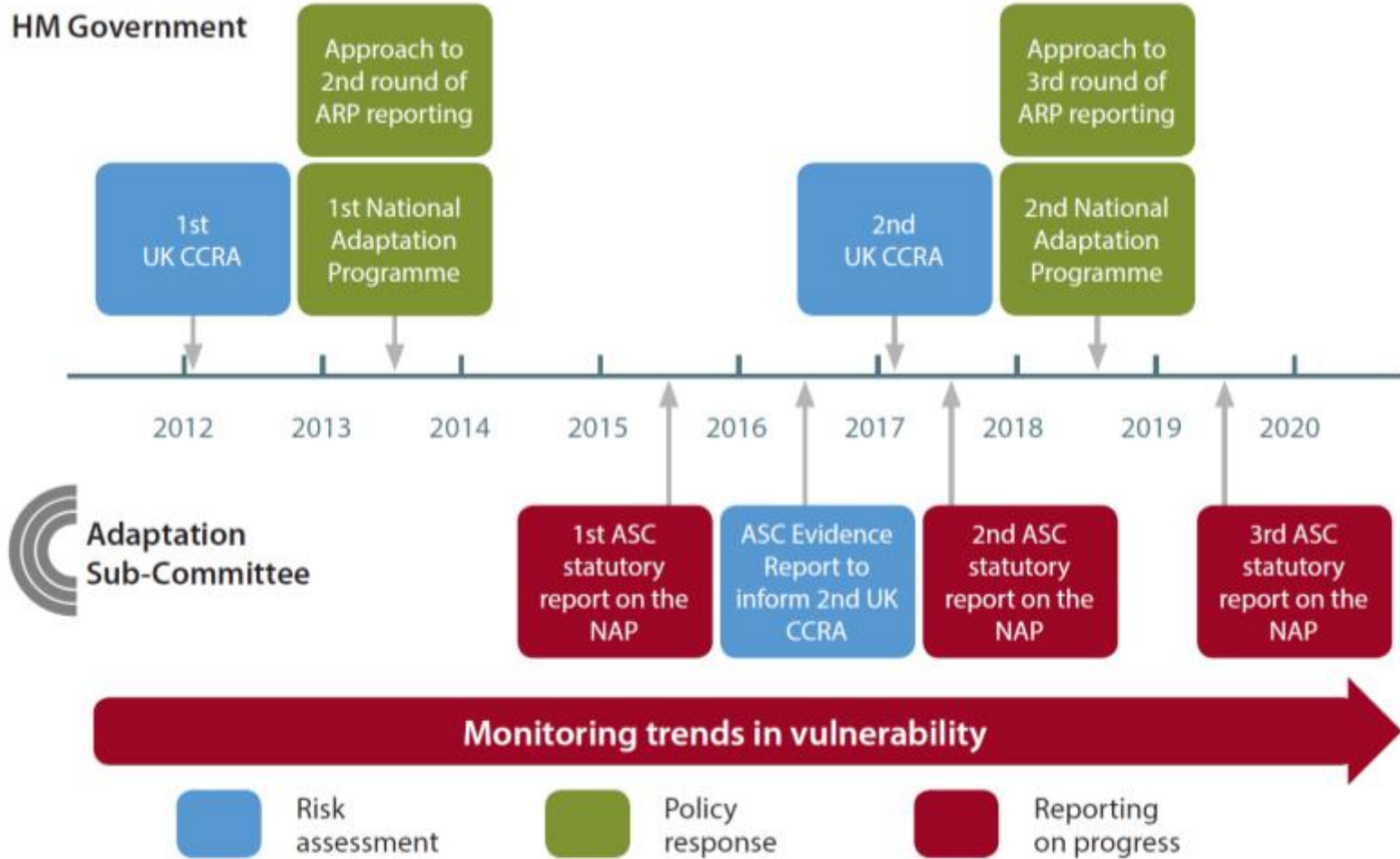


Prof Jim Hall

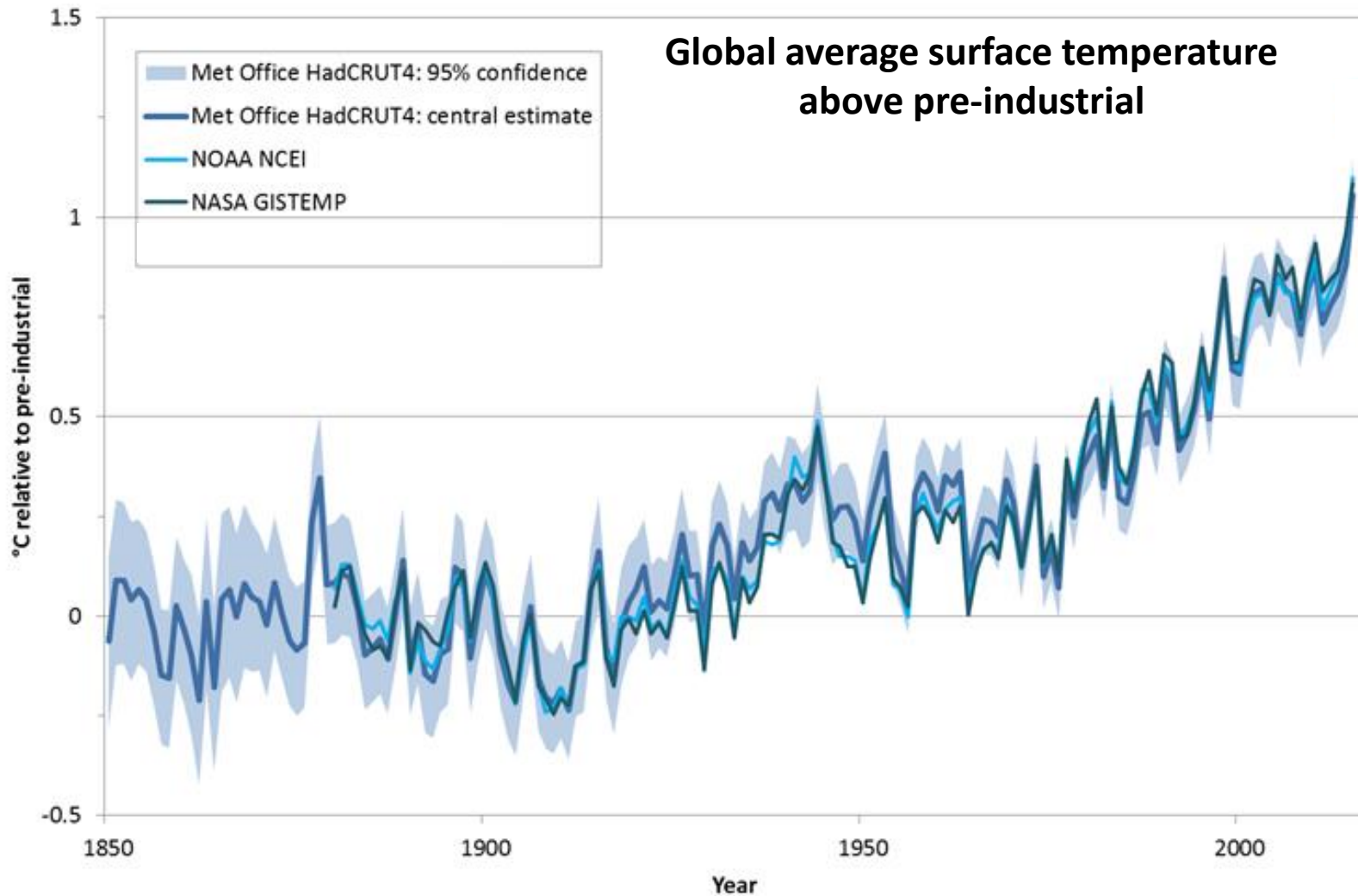
Prof Dame  
Anne Johnson



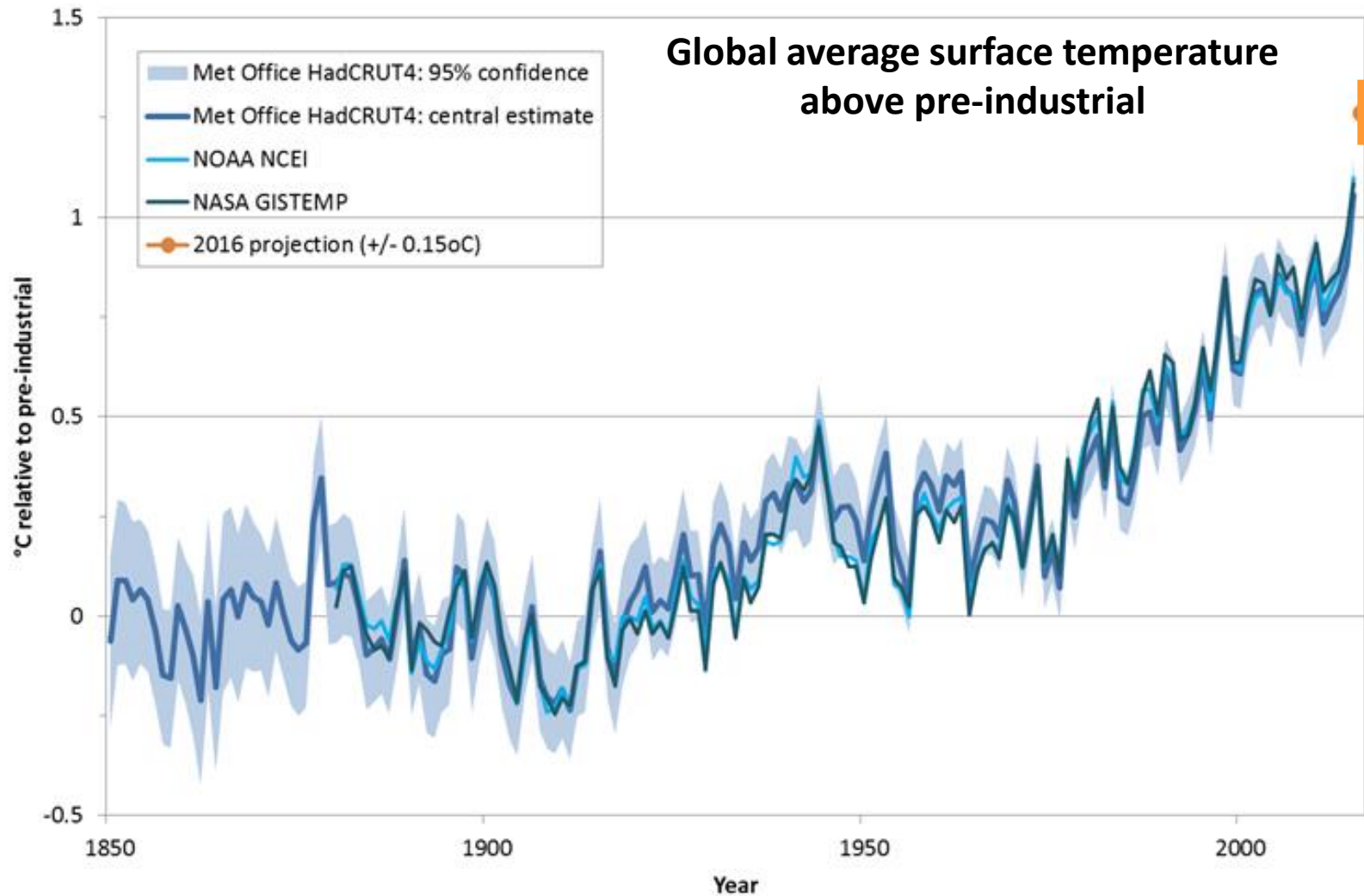
# The ASC's role in the UK adaptation policy cycle



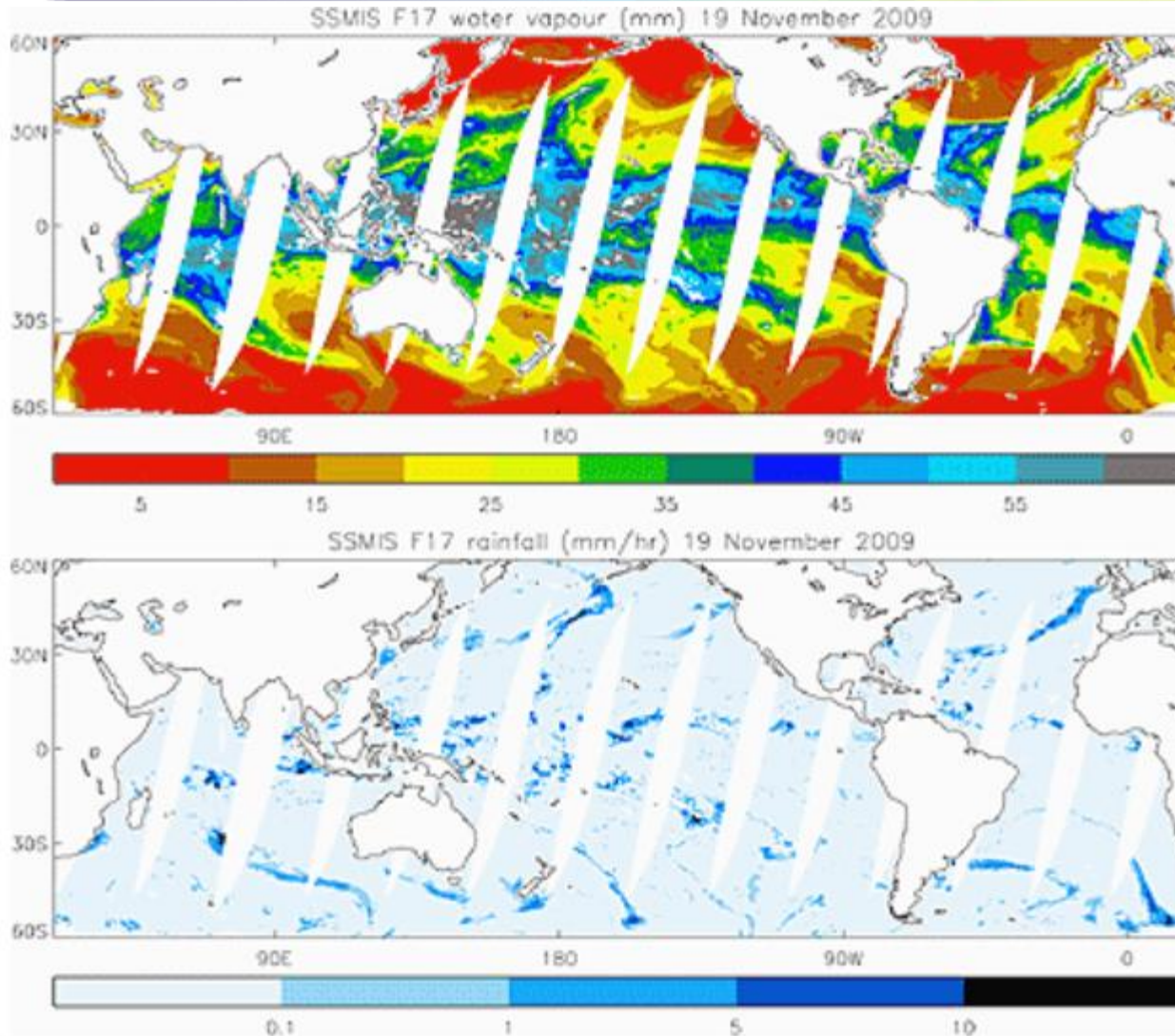
# Global average temperature has been steadily increasing



# 2016 is extremely likely to be the warmest year on record, the third record warmest year in a row



# Higher temperature means higher atmospheric moisture, which can result in heavier rainfall events

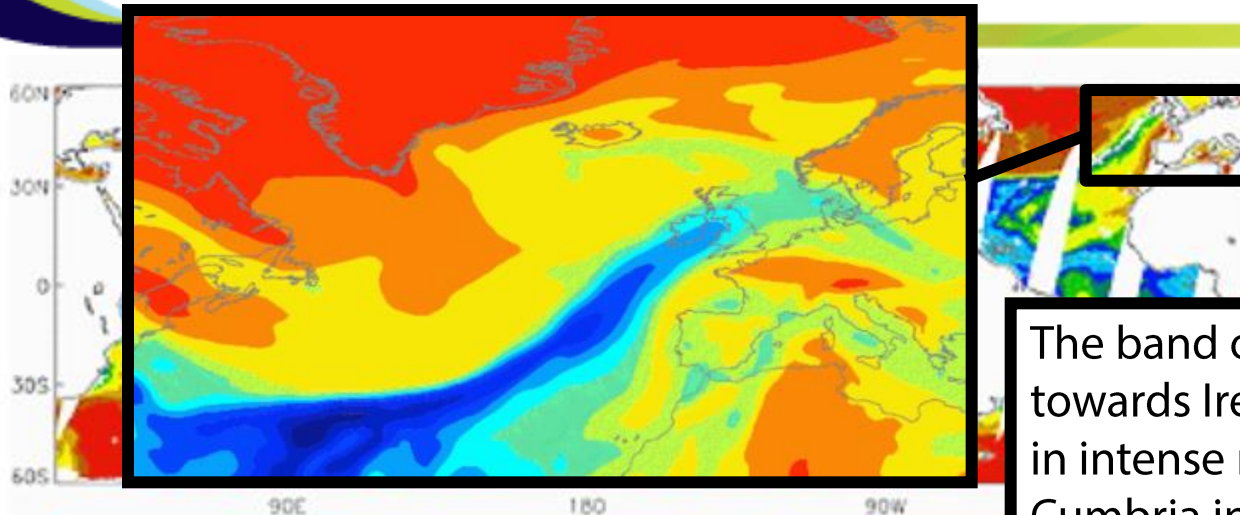


<- Total atmospheric water vapour (mm) on the 19th November 2009.

<- Precipitation rate (mm per hour) over the oceans on the 19th November 2009.

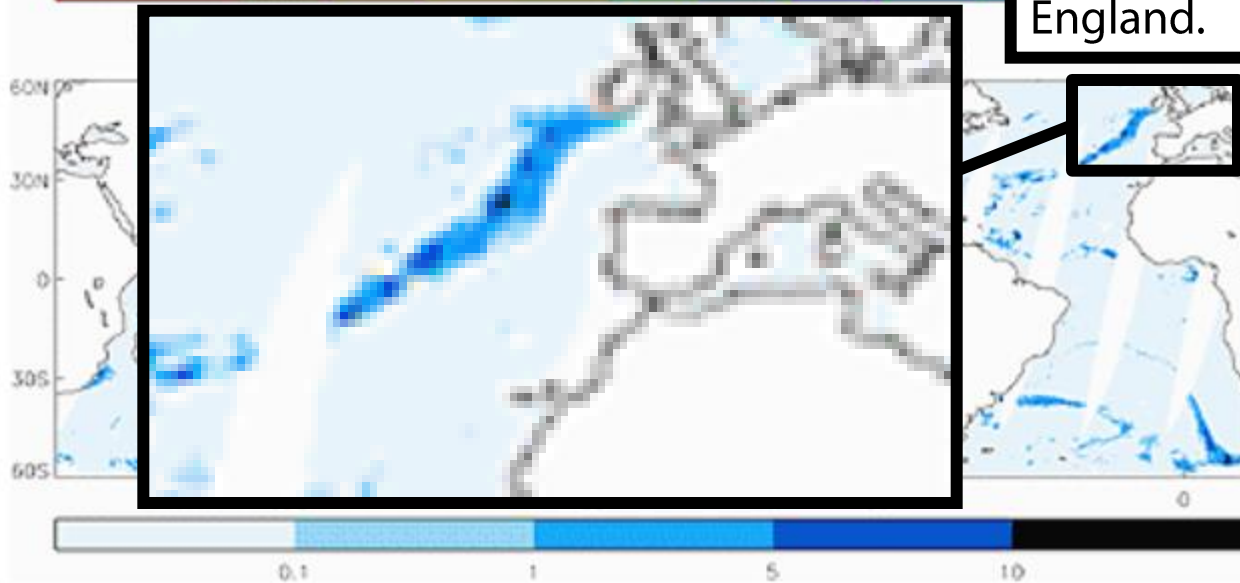
Sustained heavy rainfall outside the tropics is associated with warm, moist flows of air ("atmospheric rivers")

# Higher temperature means higher atmospheric moisture, which can result in heavier rainfall events



<- Total atmospheric water vapour (mm) on the 19th November 2009.

The band of moist air extending up towards Ireland and the UK resulted in intense rainfall and flooding in Cumbria in the North West of England.

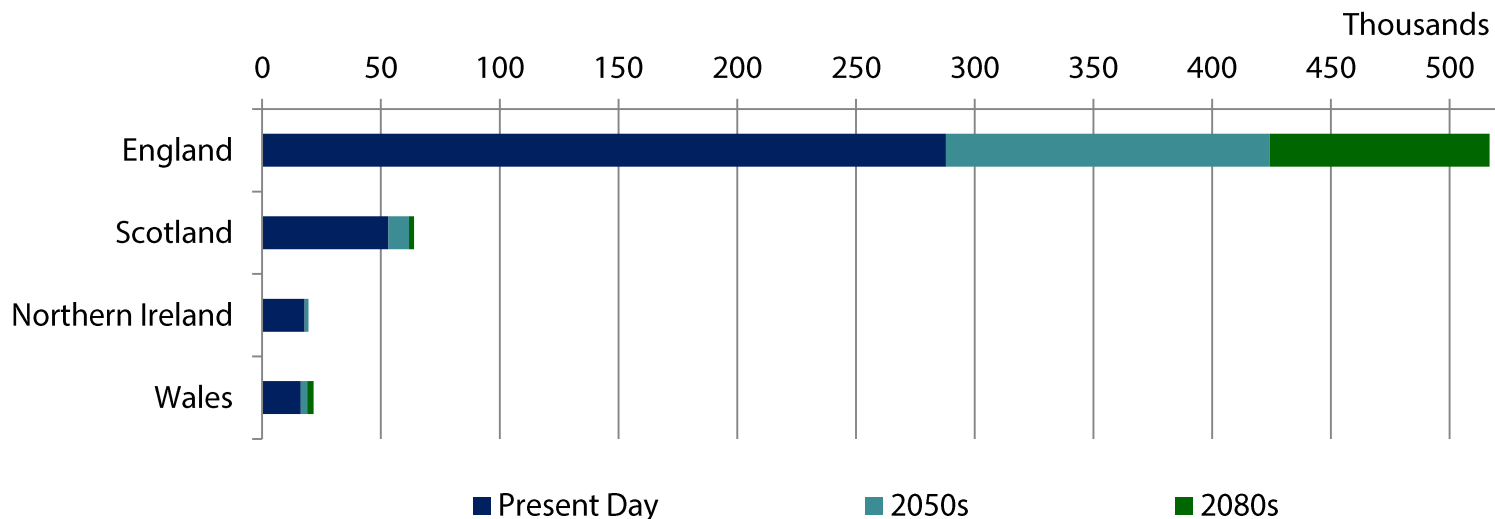


<- Precipitation rate (mm per hour) over the oceans on the 19th November 2009.

Sustained heavy rainfall outside the tropics is associated with warm, moist flows of air often ("atmospheric rivers")



## Residential properties with more than 1-in-75 annual chances of surface water flooding



Currently, **375,000** houses with 1-in-75 annual chance of being flooded by surface water...

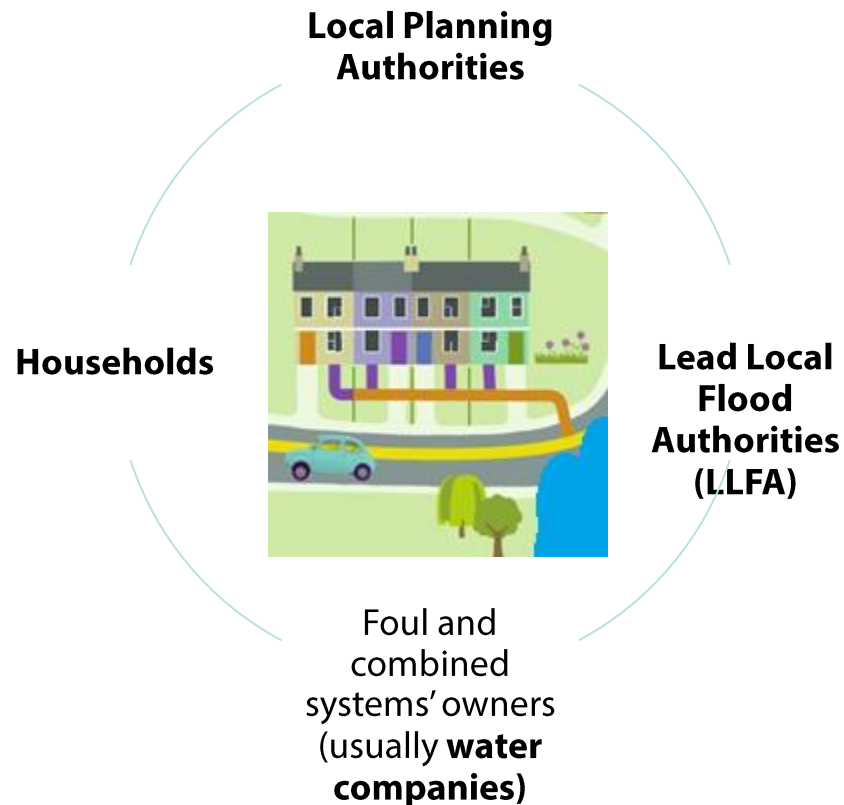
... and this might rise to **620,000** by 2080s.

### Percentage changes in intense rainfall of < 6 hours duration

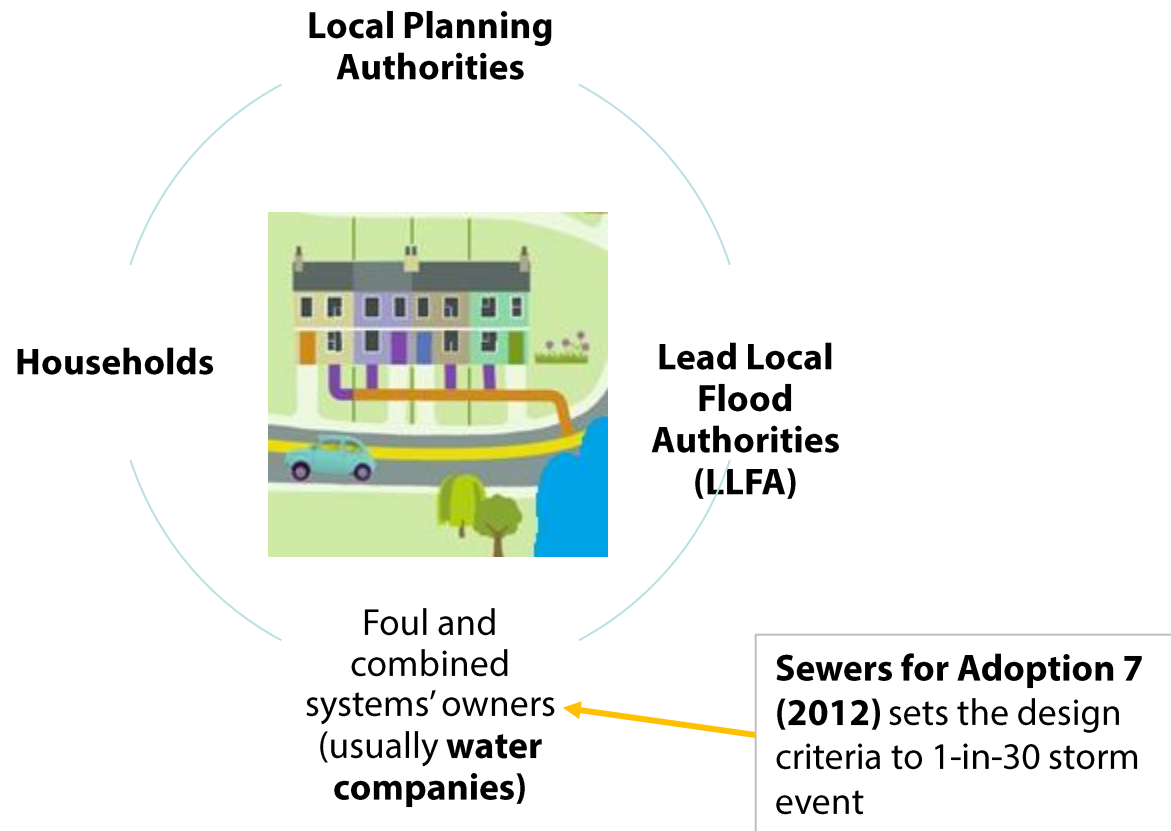
Global Mean Temperature change	2020s	2050s	2080s
2° C	0	+10%	+20%
4° C	+10%	+20%	+50%

Source: UKWIR, 2015

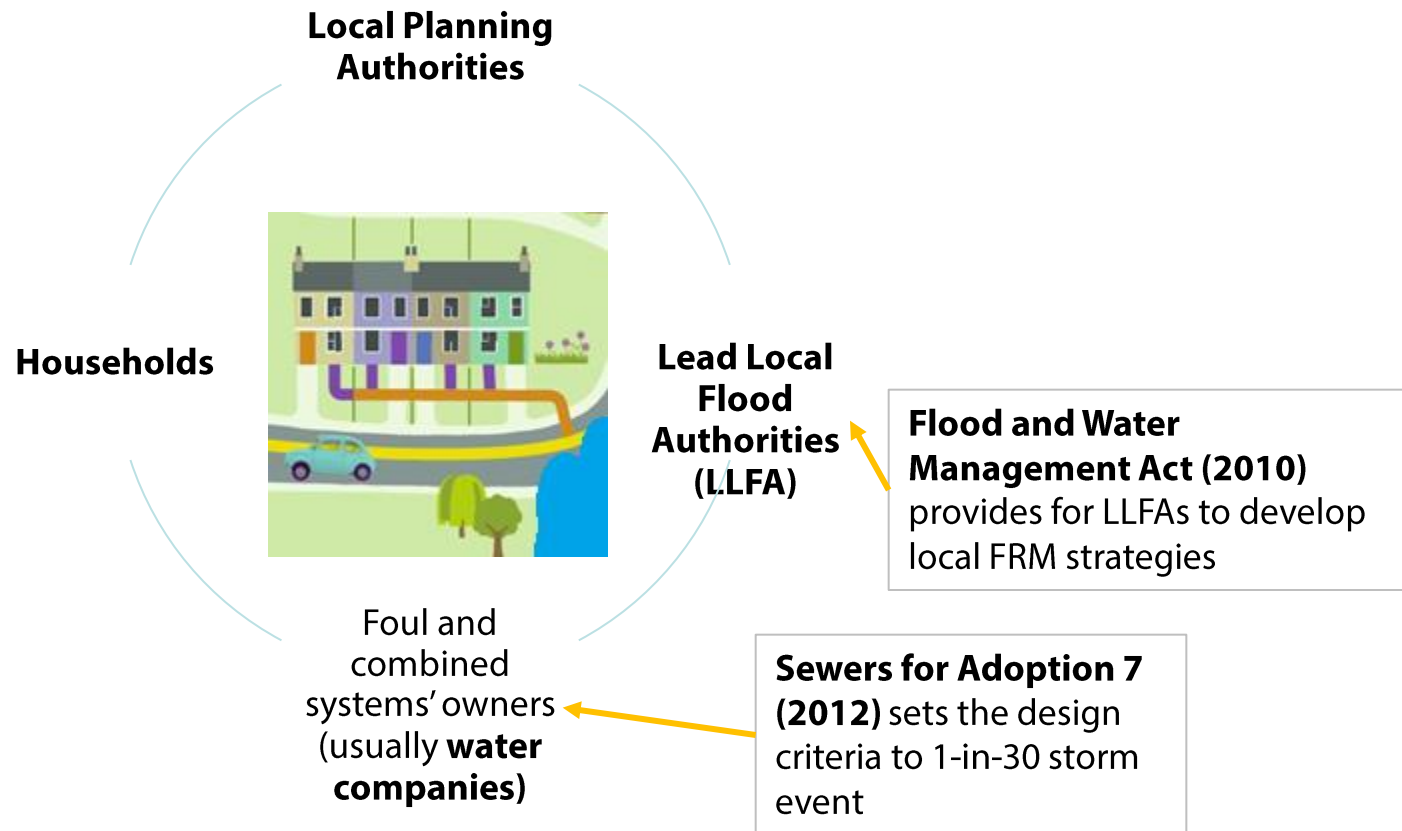
# Policies and responsibility for surface water management in England



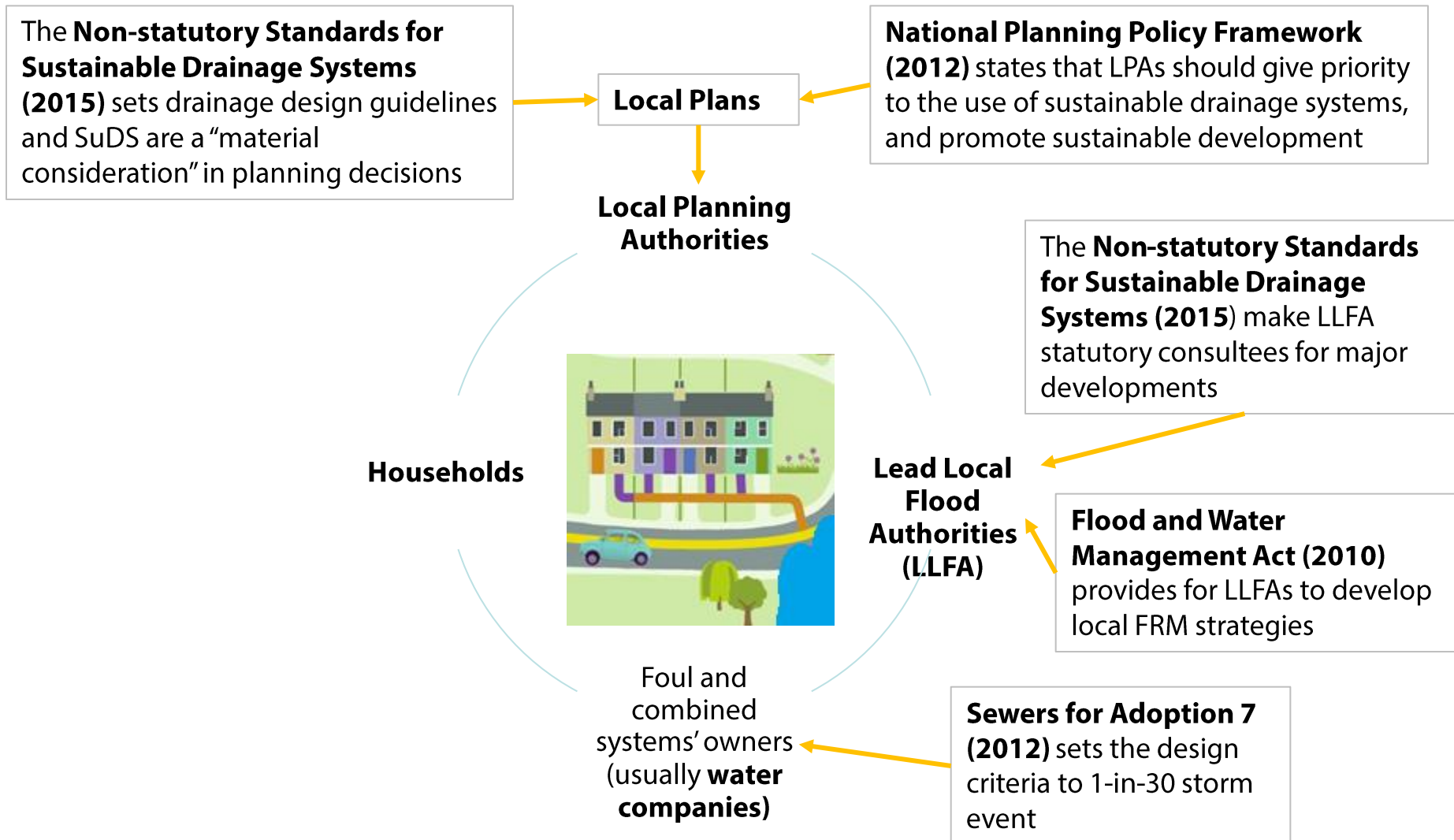
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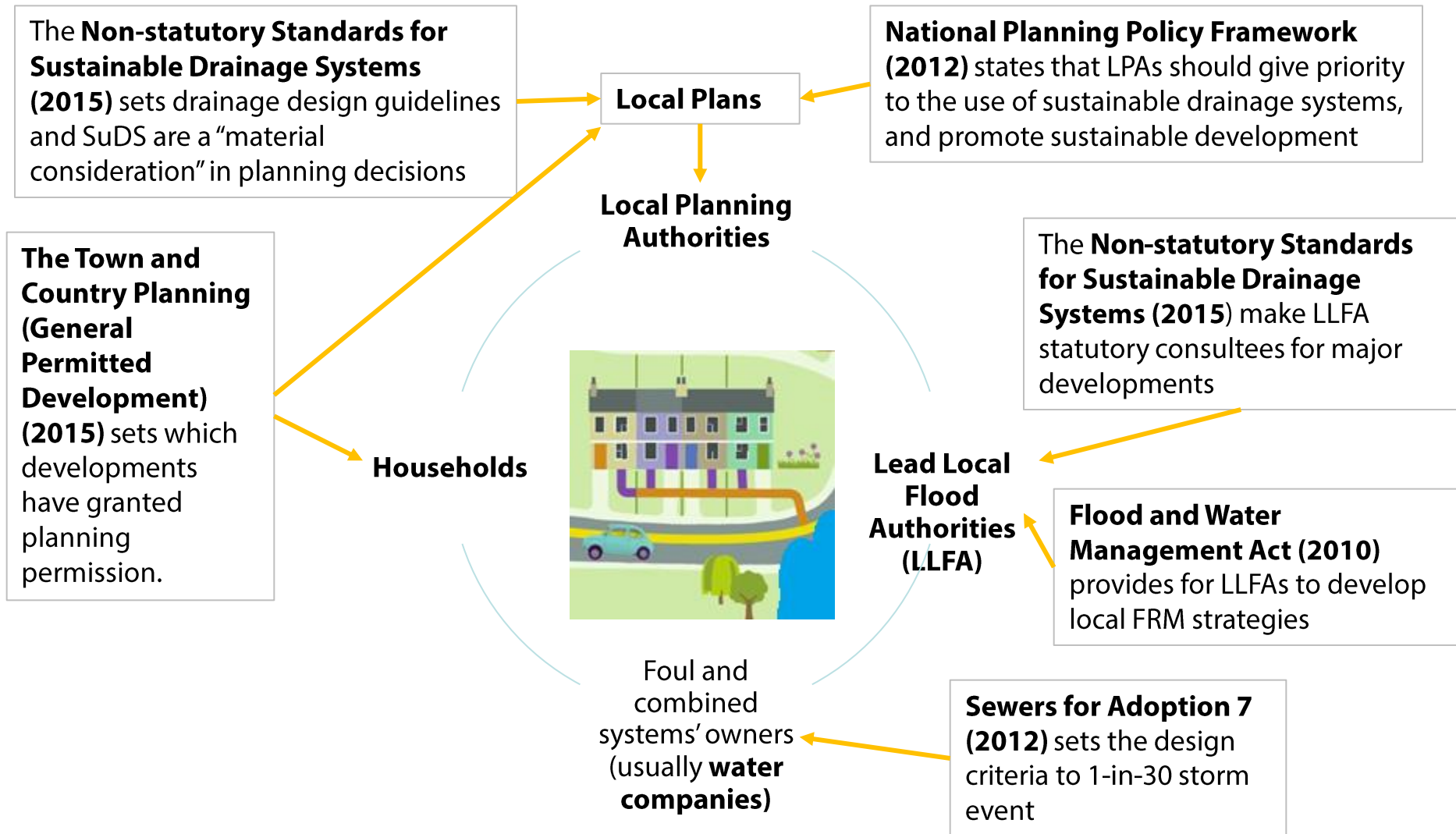
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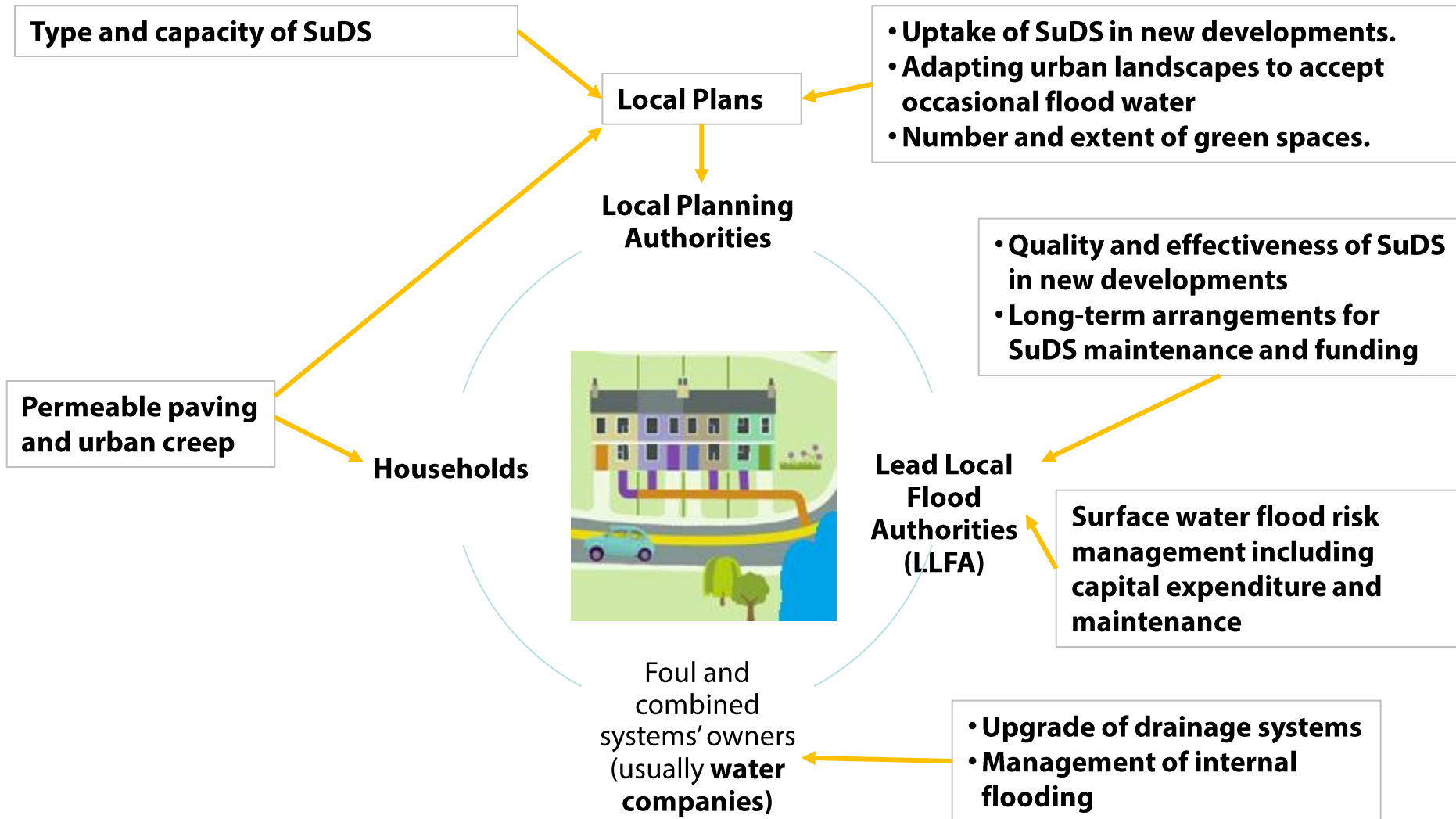
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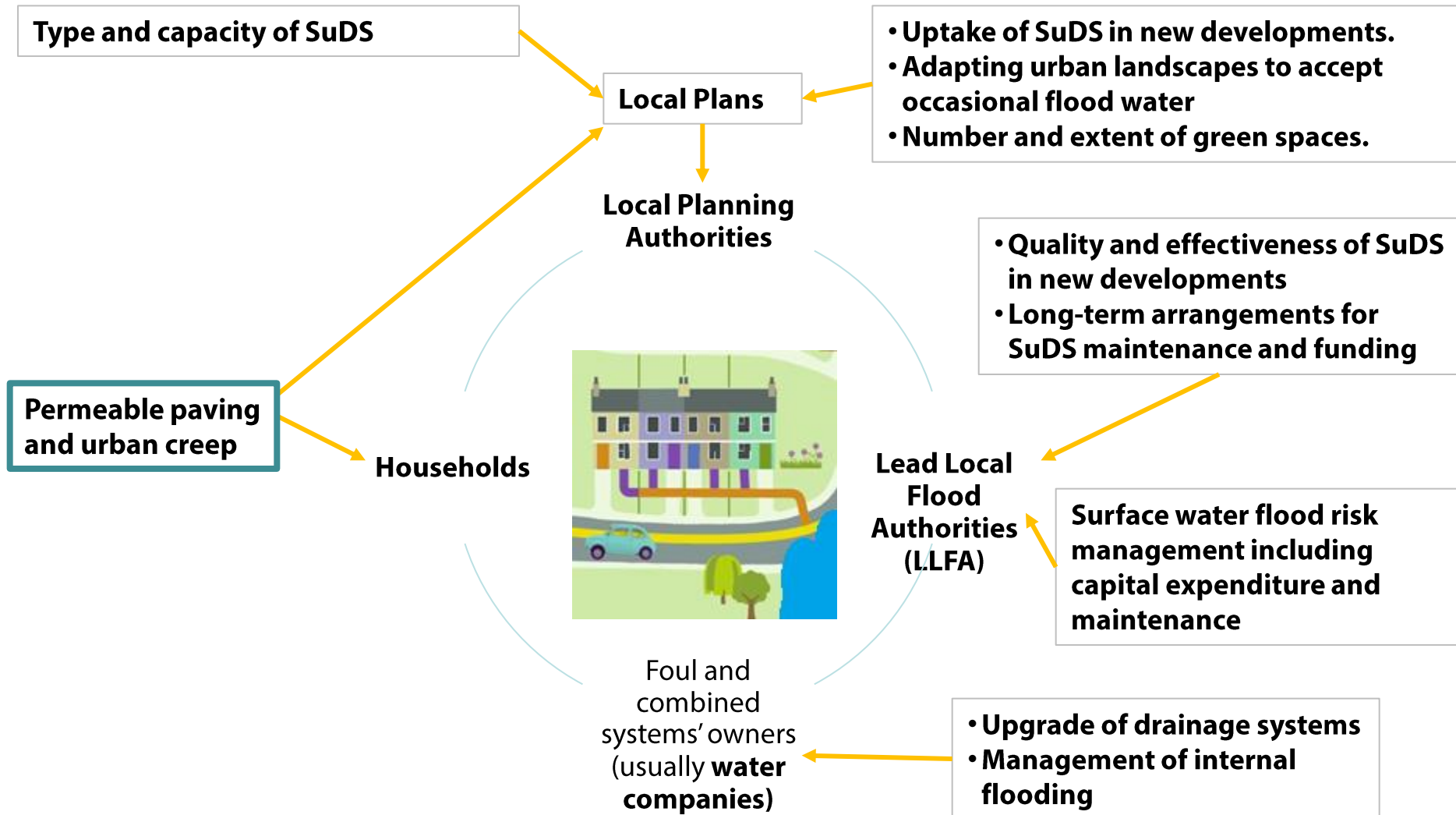
# Policies and responsibility for surface water management in England



# Important surface water flood risk issues that current policies might affect



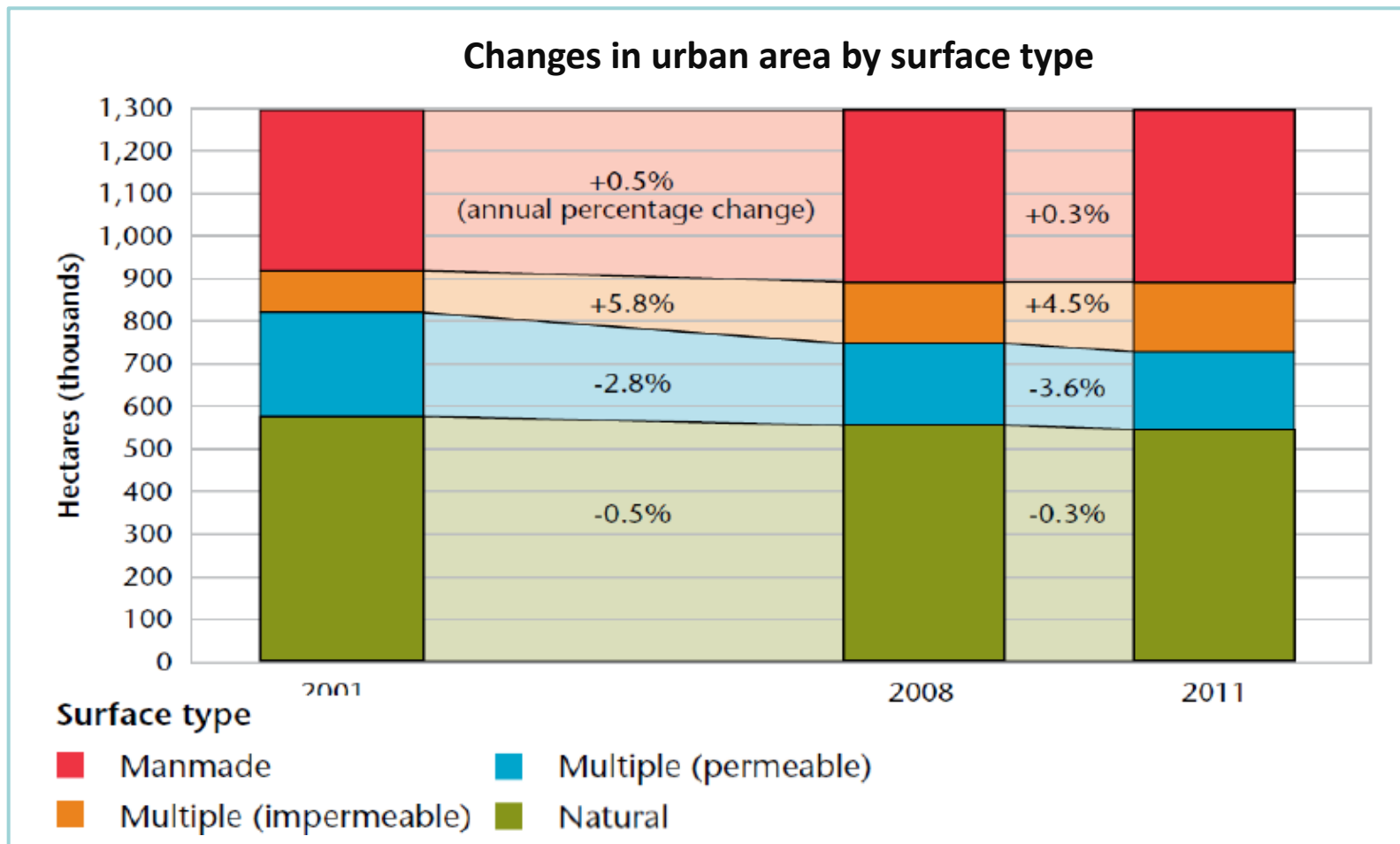
# Assessing the positive and negative trends on surface water flood risk





# The area of impermeable surfacing is increasing

- Impermeable area increased from **37% in 2001 to 44% in 2011**.



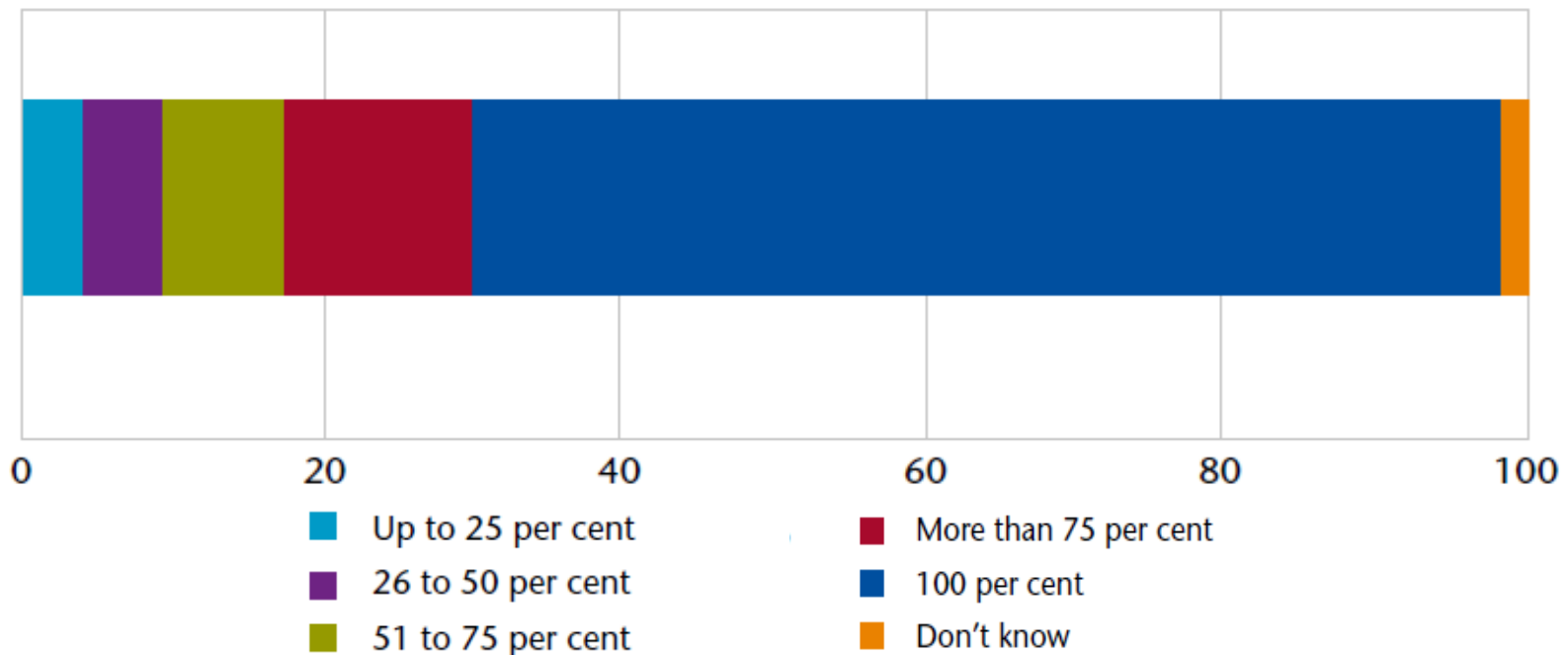




# Funding for local flood risk management are decreasing

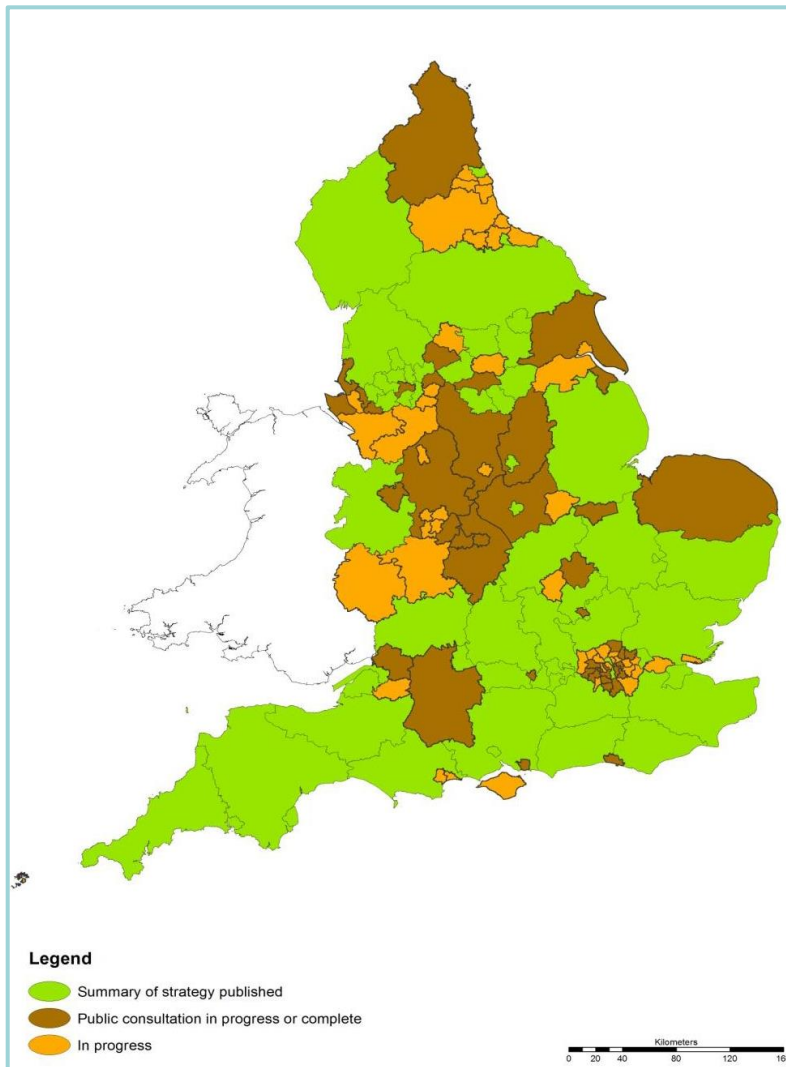
- Funding allocated by Defra to local flood risk management can be diverted.
- Defra grants to LLFAs were reduced from £15m in 2014/15 to £10m in 2015/16.

Q). How much of Defra's funding to your authority for its LLFA role has been allocated to flood risk management in your authority?



**Note:** Results of a survey carried out by the LGA in 2012 of all 152 lead local flood authorities in England. 95 LLFAs responded.

# The number of local flood risk management strategies has increased, but rate of progress is slow



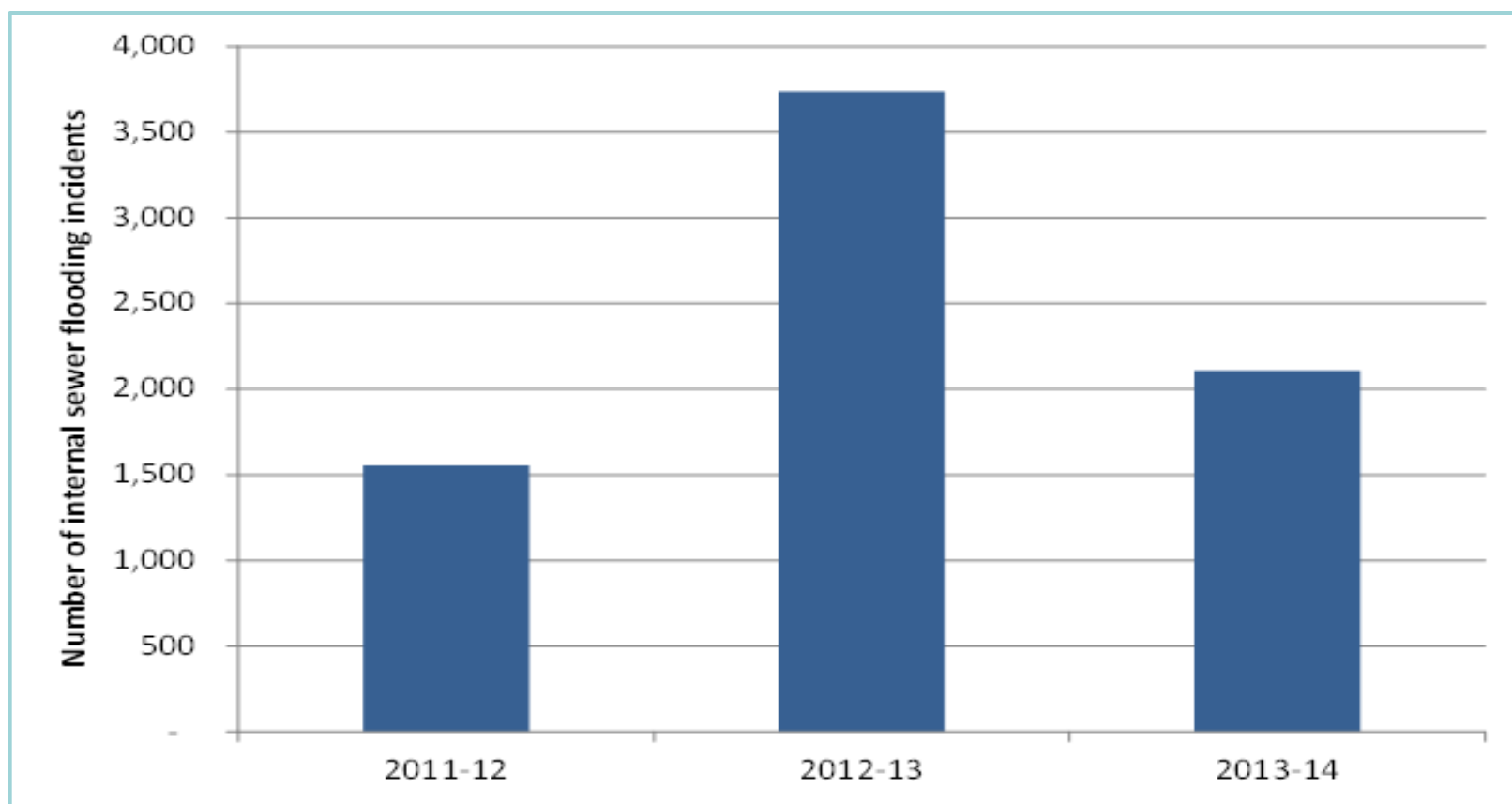
- By April 2016, **114 (75%)** of the 152 Lead Local Flood Authorities (LLFA) published their local flood risk strategies
- This is a steep increase from the 59 (39%) strategies published in 2015 and the 24 (16%) in 2014.
- **12 (8%)** are still work in progress, compared with 50 (32%) in 2015.





## No clear trend in the number of households flooded internally from sewers

- An average of 2,500 households affected by internal in 2011/12 - 2013/14.
- This however is not an exhaustive indicator as is weather-dependent.



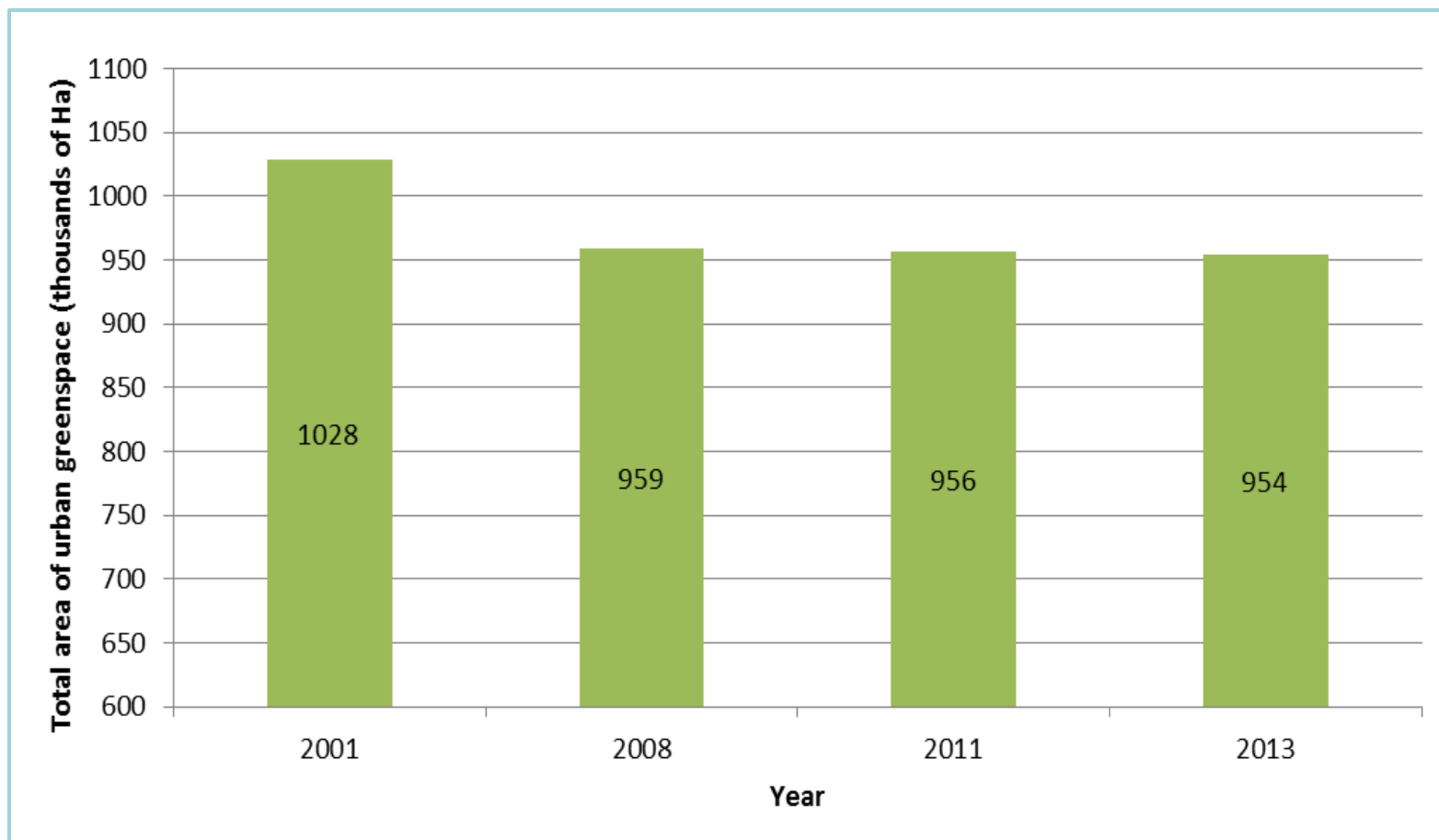






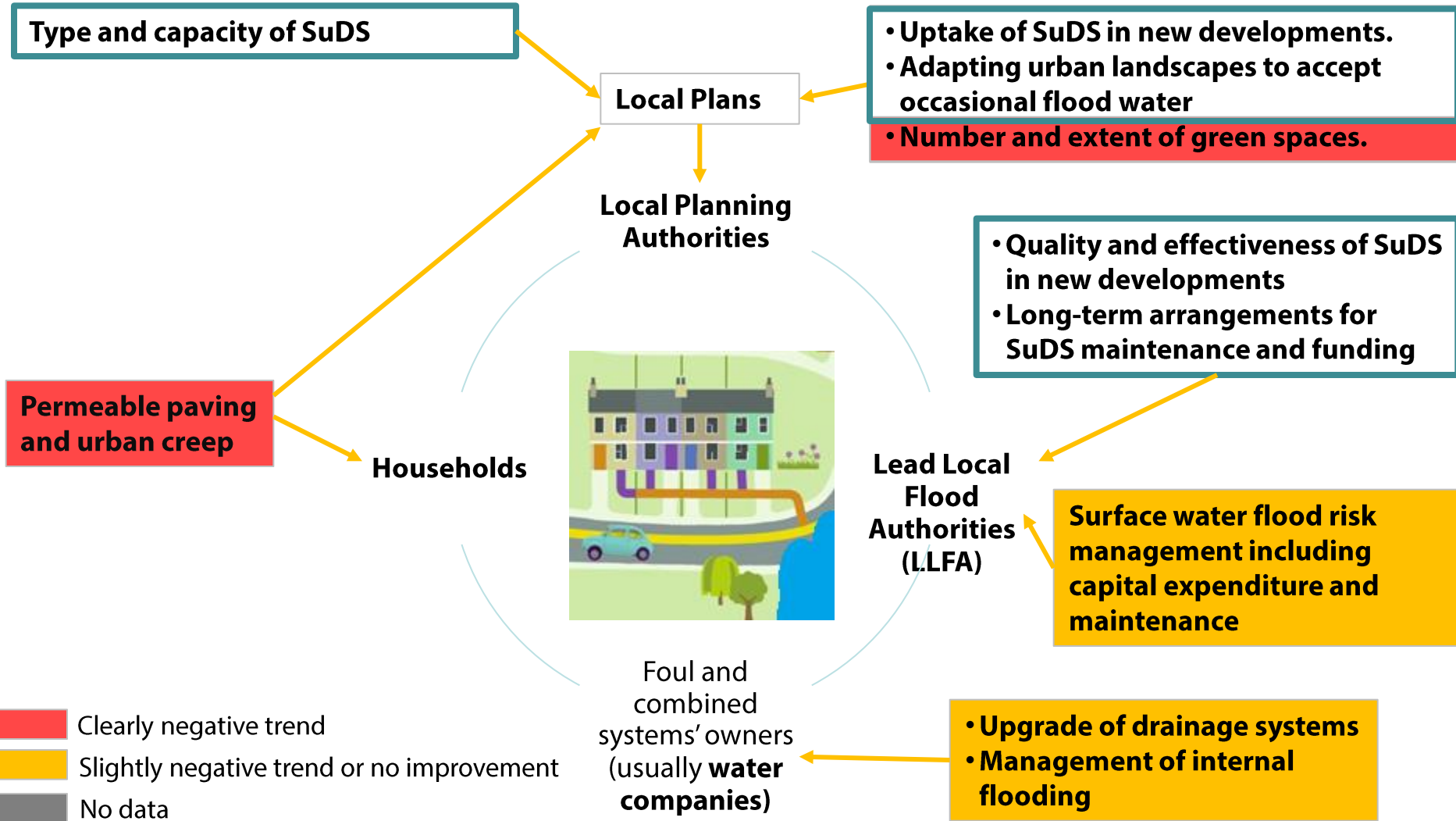
# The area of urban greenspace has declined since 2001

- The area of urban greenspace has declined by **7% (74,000 Ha)** between 2001 and 2013.



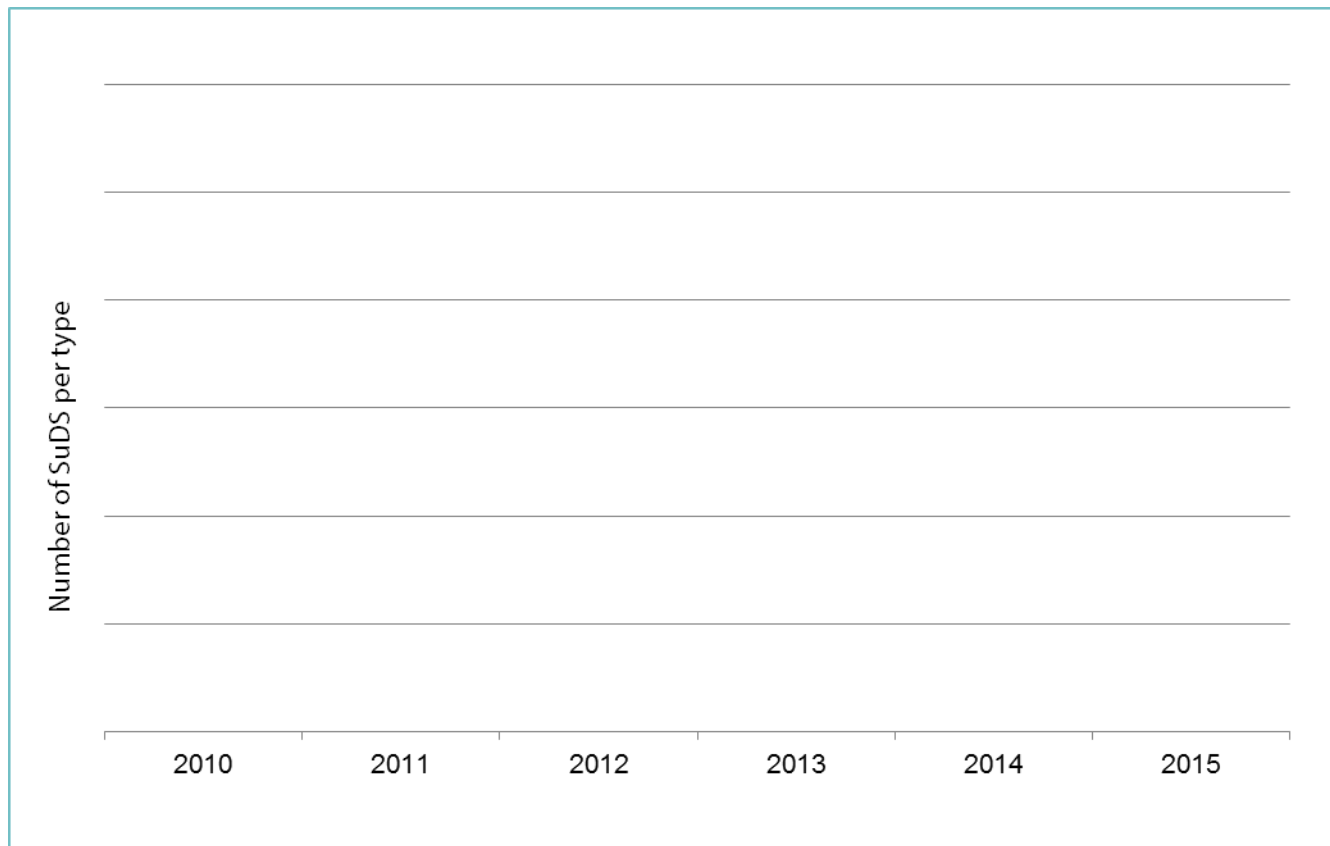


# Assessing the positive and negative trends on surface water flood risk

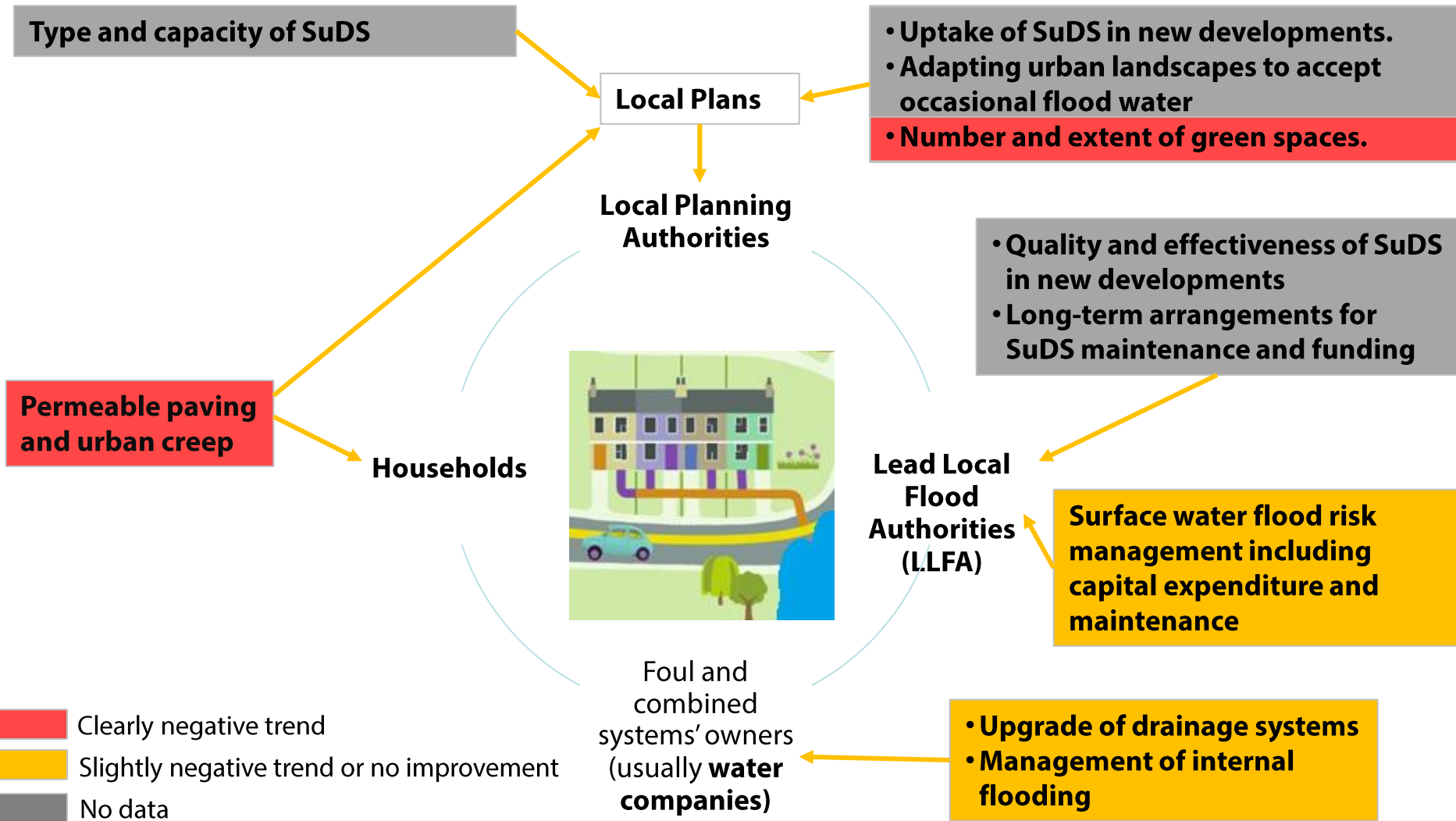


# Uptake of SuDS in new development

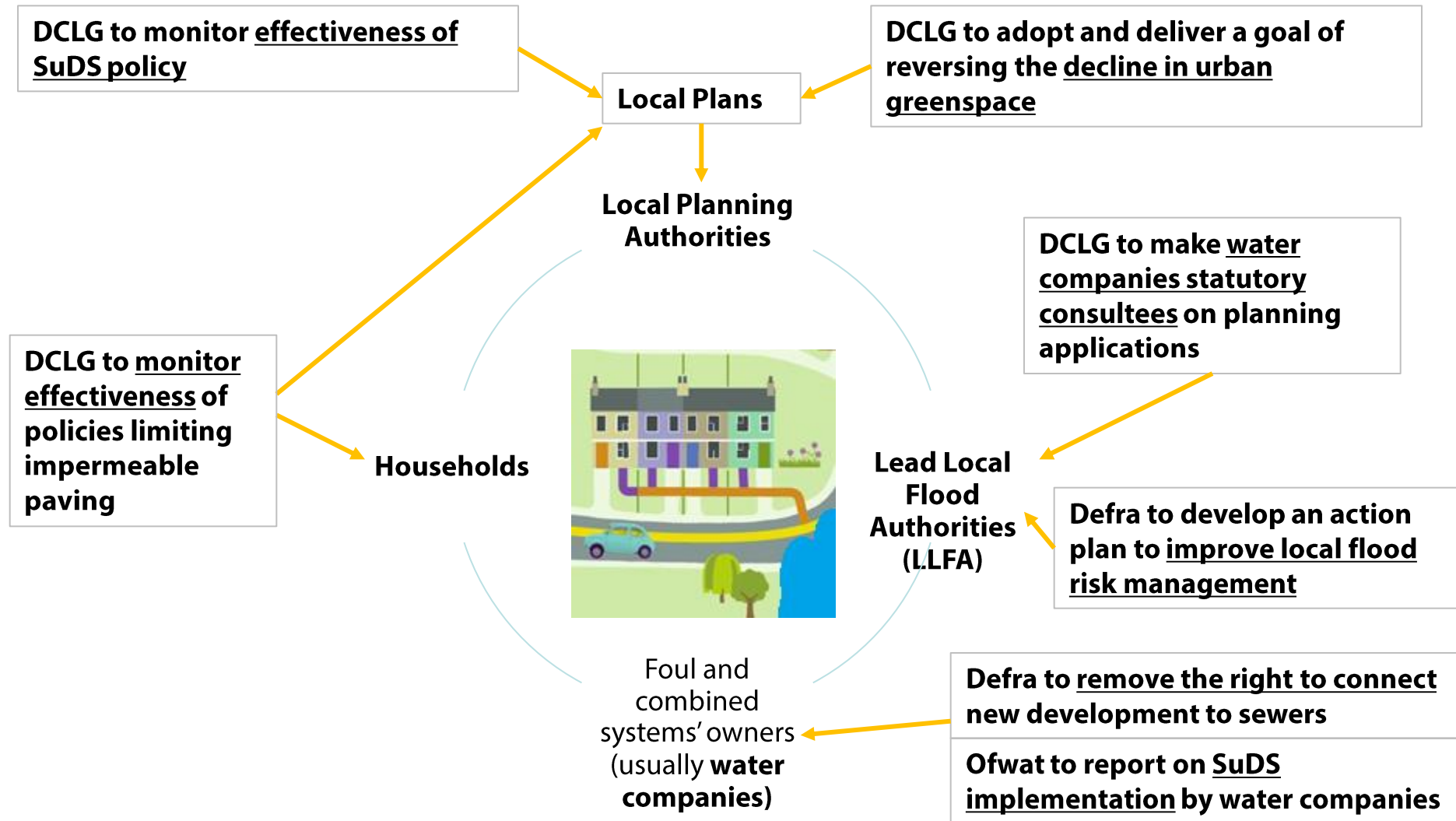
- There is **no national monitoring** of SuDS uptake, types, quality and impacts in reducing surface water flooding.



# Assessing the positive and negative trends on surface water flood risk

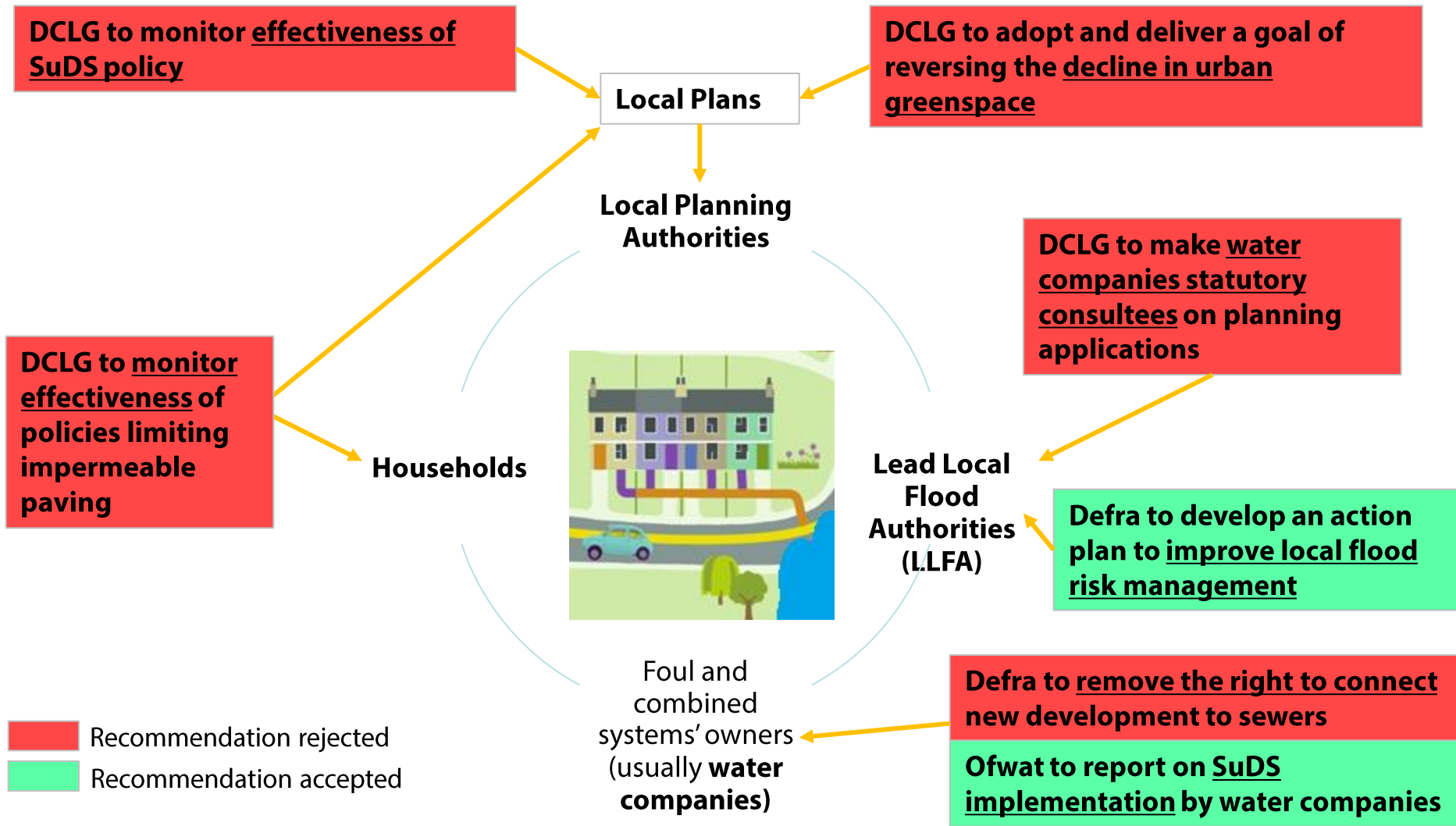


# The ASC made specific recommendations to Government



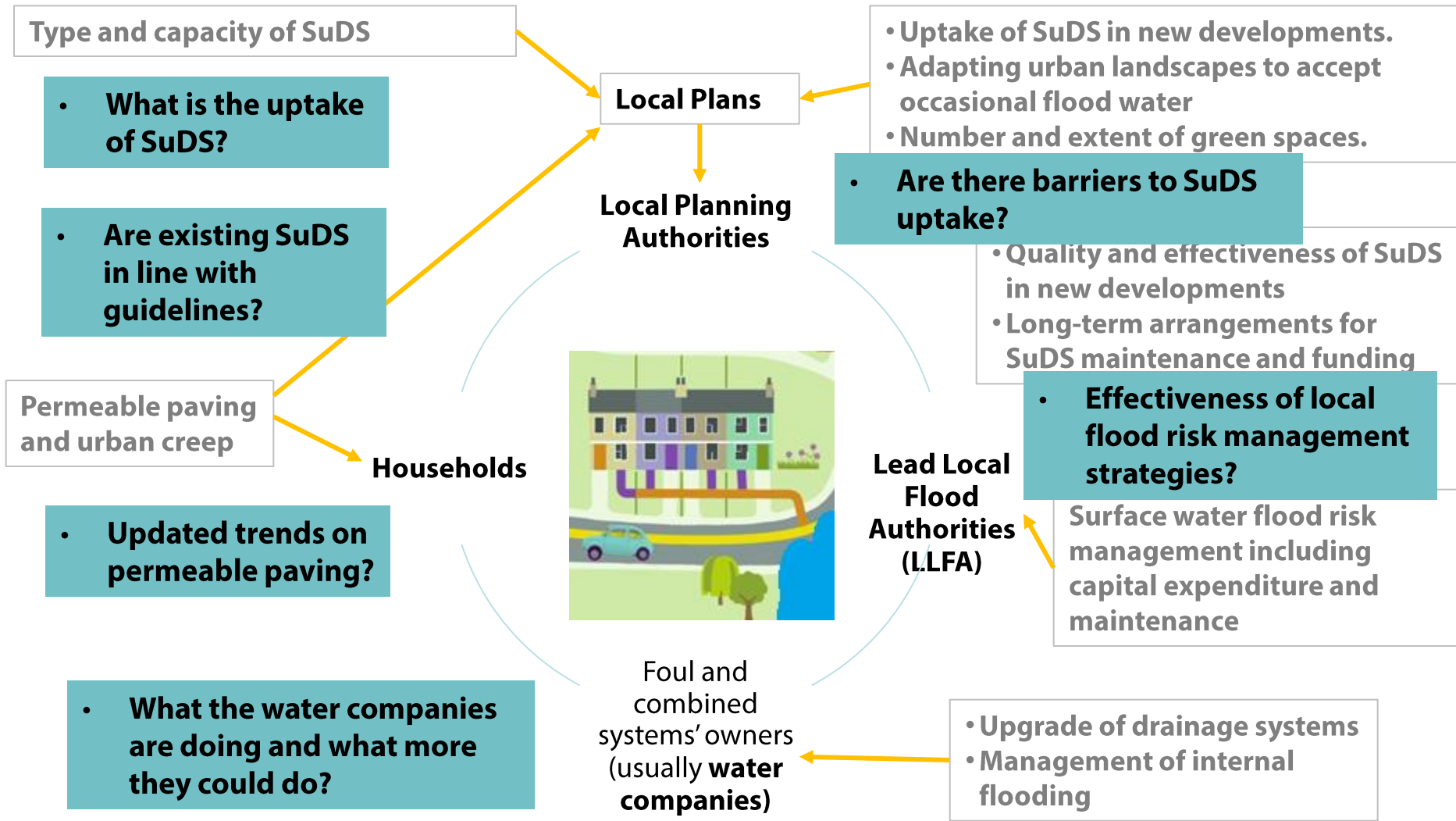


# The ASC made specific recommendations to Government





# The ASC will publish an updated assessment in 2017, looking at some of these questions



Thank you!



## Adaptation Sub-Committee

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