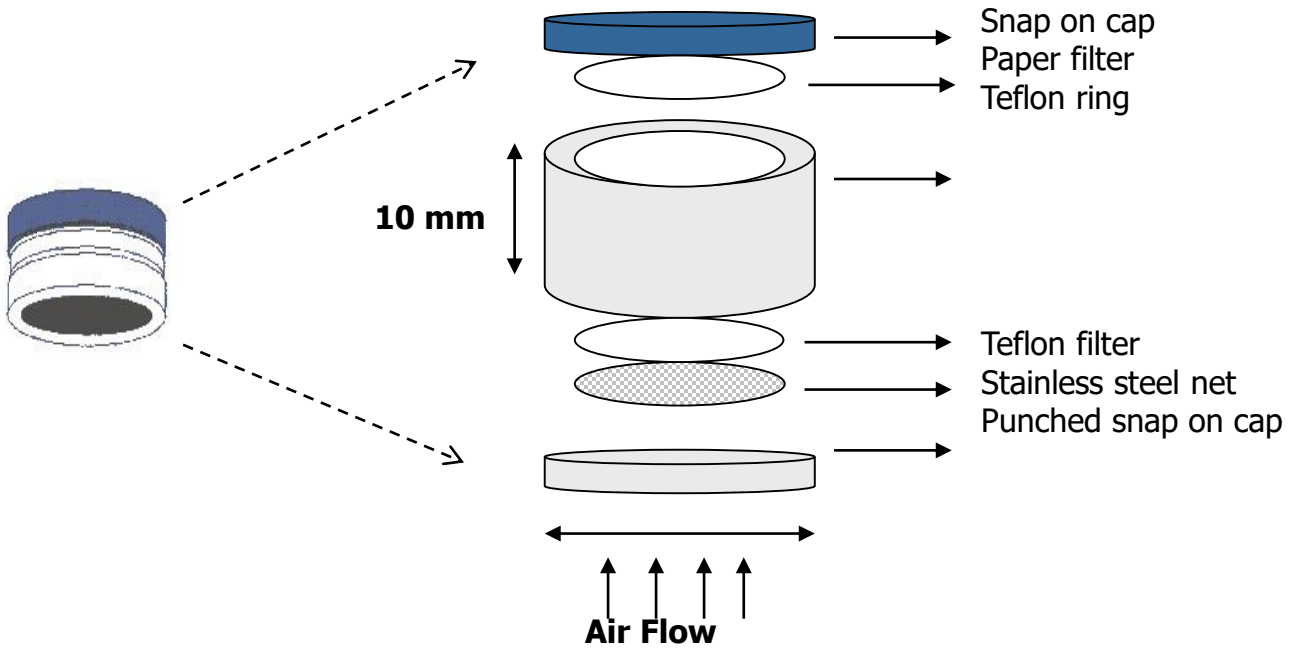
Transboundary Pollution in Sri Lanka: A case study from the North-Central province

The city of Anuradhapura is situated in the east part of Sri Lanka is expected to have a higher degree of pollution due to transboundary pollution from neighboring countries such as India and China during the north-east monsoon period.


INDIA
Kankesanturai
Point Pedro
Tondi
Palk Strait
Jaffna
Devipattinam
Delft Island
Palk Bay
NORTH EASTERN
Mullaittivu
Bay of Bengal
Dhanushkodi
Ferry
Mankulam
Mannar
Pulmoddai
Vavuniya
Trincomalee
NORTH CENTRAL
Anuradhapura
Yan Oya
Gulf of Mannar
Kalpitiya
Kala Oya
Puttalam
Habarane
Polonnaruwa
Maho
Batticaloa
NORTH WESTERN
NORTH EASTERN
Chilaw
Kurunegala
Matale
Mahaweli Ganga
Kandy
Amparai
Gal Oya
Negombo
Kegalla
CENTRAL
Nuwara Eliya
Kelani Ganga
Badulla
Colombo
UVA
Moneragala
Pottuvil
Moratuwa
WESTERN
Ratnapura
Kalu Ganga
Opanake
Kalutara
SABARAGAMUWA
Walawe Ganga
SOUTHERN
Hambantota
Galle
Matara
INDIAN OCEAN
Sri Lanka
National capital
Province boundary
Province capital
Railroad
Road
0 20 40 Miles
0 20 40 Kilometers
Base 802514 6-00

Schematic diagram of the Passive sampler

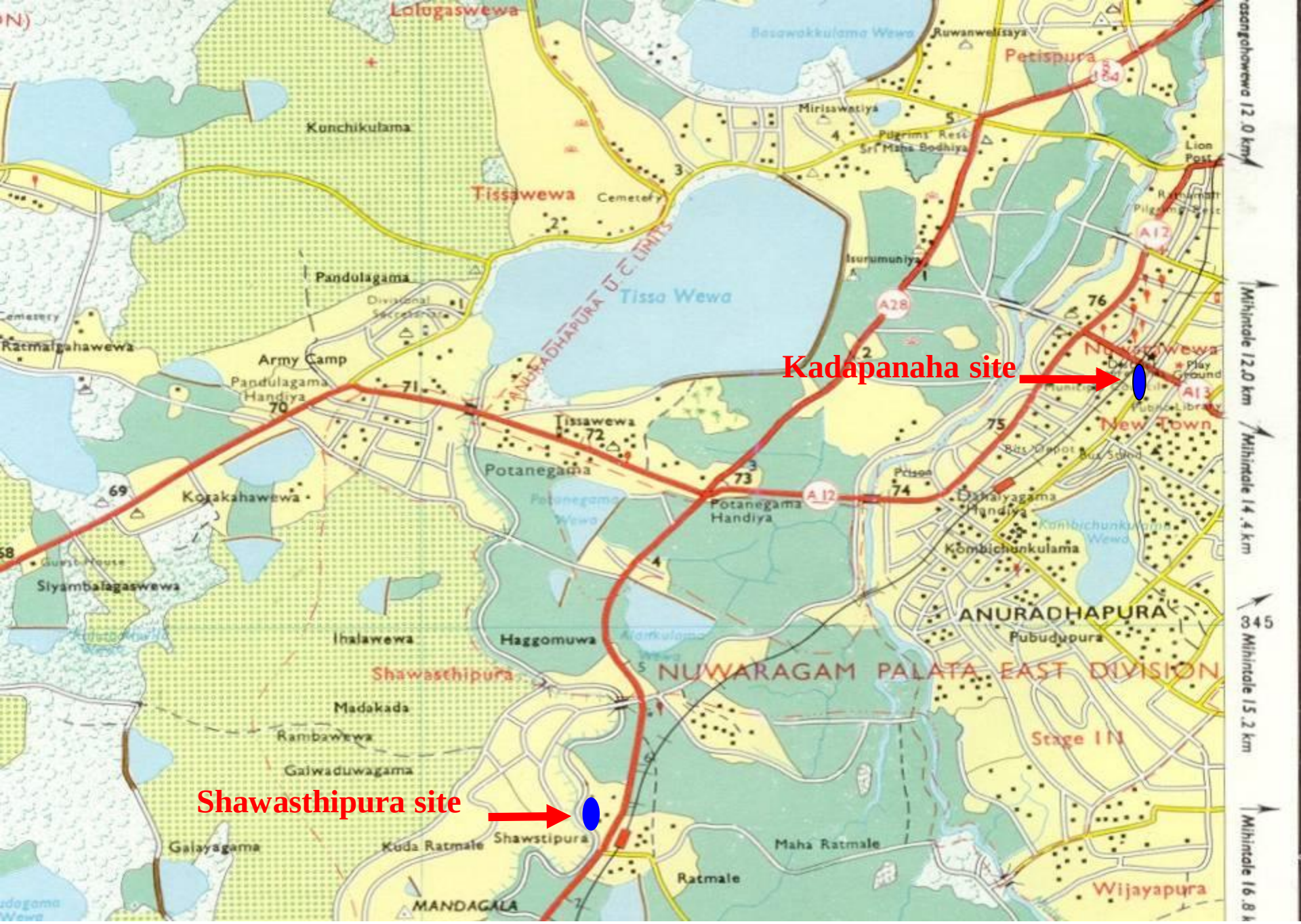


- Two sites selected
- **Kadapanaha (Apk)**

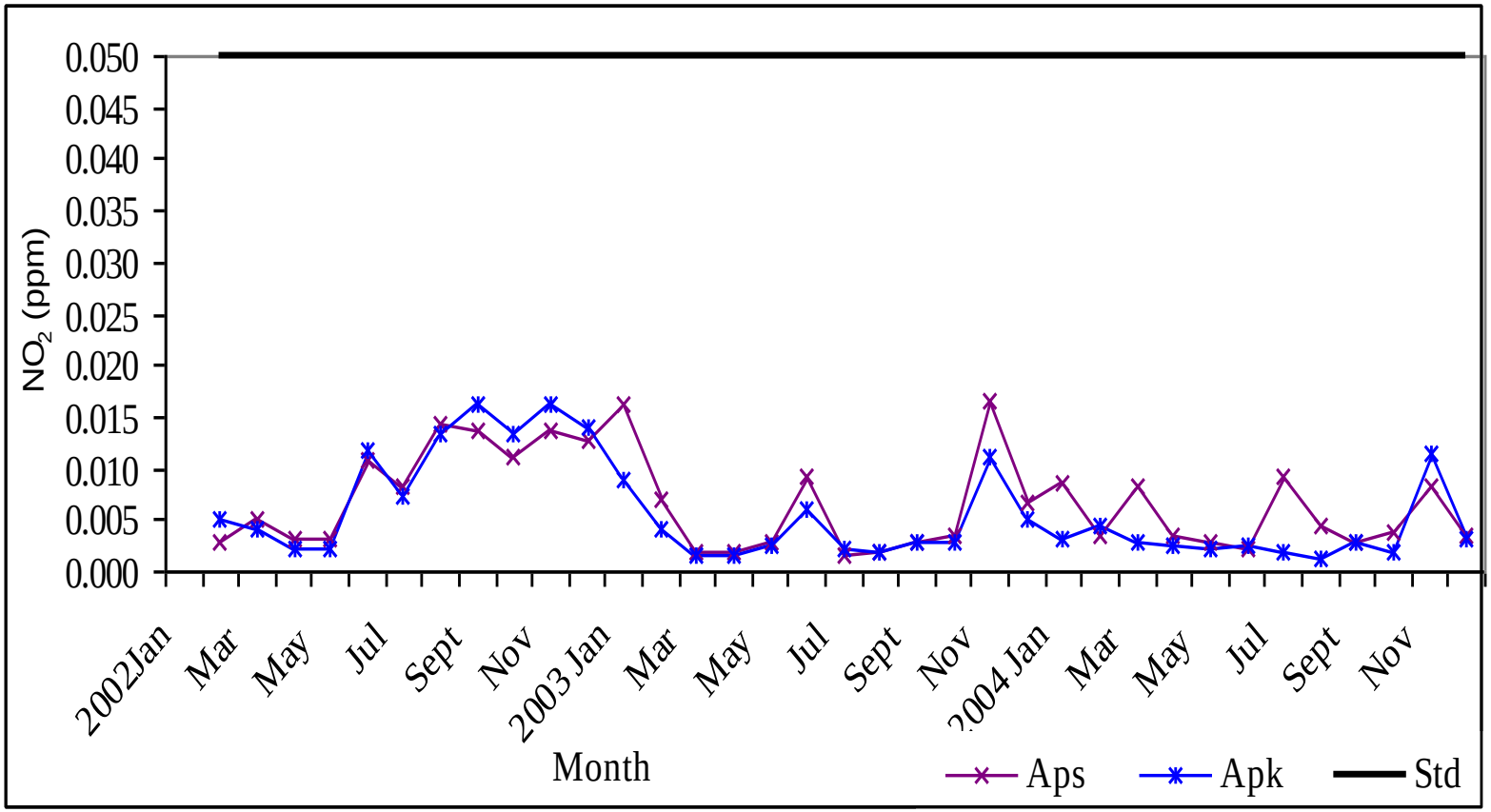
represents the Anuradhapura municipality area

- **Shrawasthipura (Aps)**

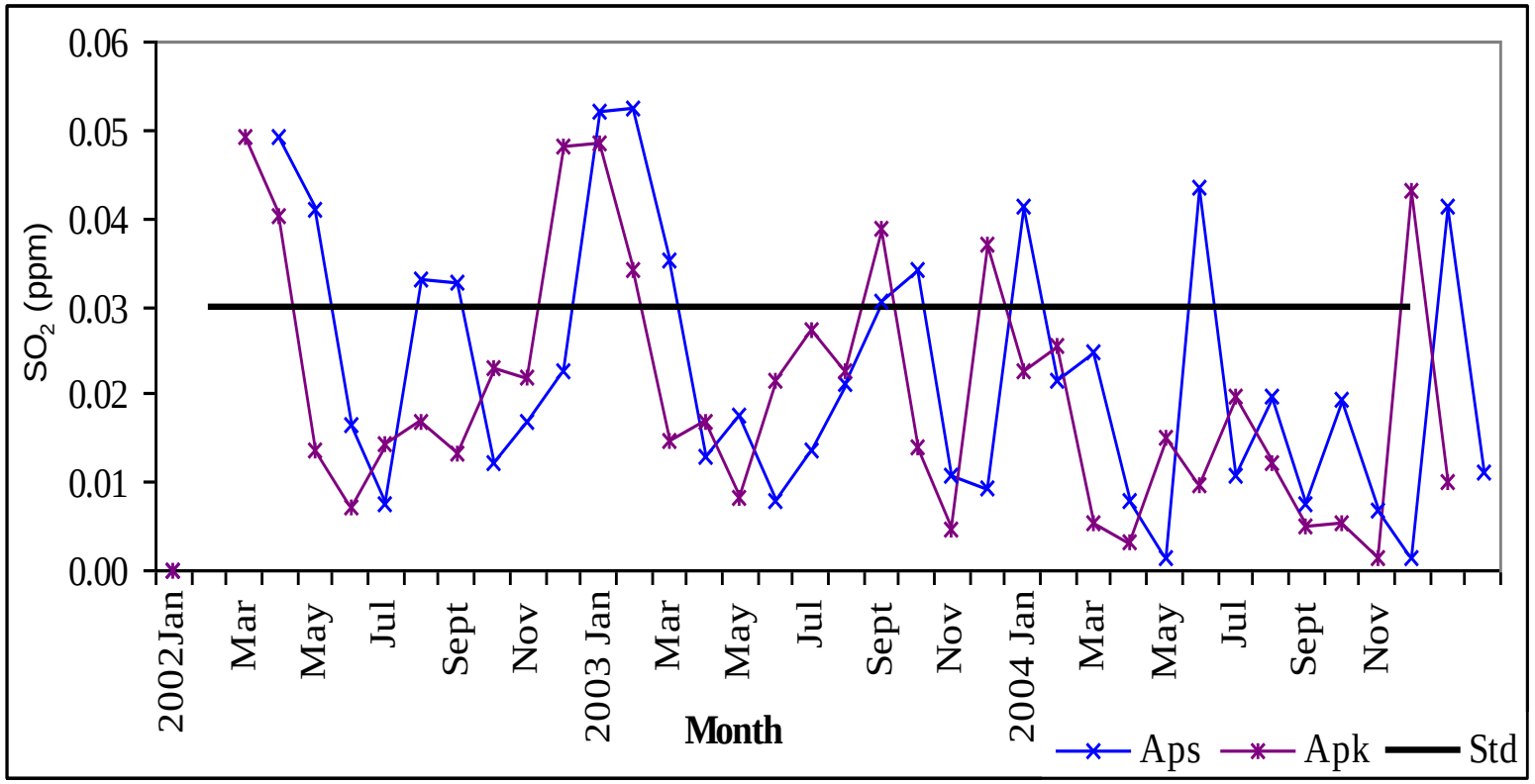
represents a village 7 km away and southeast of the main city as a reference point of a less polluted area.


Kadapanaha site
Shawasthipura site
Tissawewa
Tissa Wewa
Potanegama
Potanegama Handiya
Kombichunkulama
ANURADHAPURA
Pubudupura
NUWARAGAM PALATA EAST DIVISION
Stage III
New Town
Petispura
Ruwanwelisaya
Mirisawatiya
Pandulagama
Army Camp
Pandulagama Handiya
Ratmalgahawewa
Kotakahawewa
Siyambalagaswewa
Ihalawewa
Haggomuwa
Shawasthipura
Madakada
Rambawewa
Galwaduwagama
Galayagama
Kuda Ratmale
Shawstipura
Ratmale
Maha Ratmale
Wijayapura
MANDAGALA
Kunchikulama
Lolugaswewa
Basawakkulama Wewa
Isurumuniya
Oalalyagama Handiya
A12
A28
A13
Mihintale 12.0 km
Mihintale 14.4 km
Mihintale 15.2 km
Mihintale 16.8 km

Variation of nitrogen dioxide (Monthly averages)



Variation of sulphur dioxide (Monthly averages)



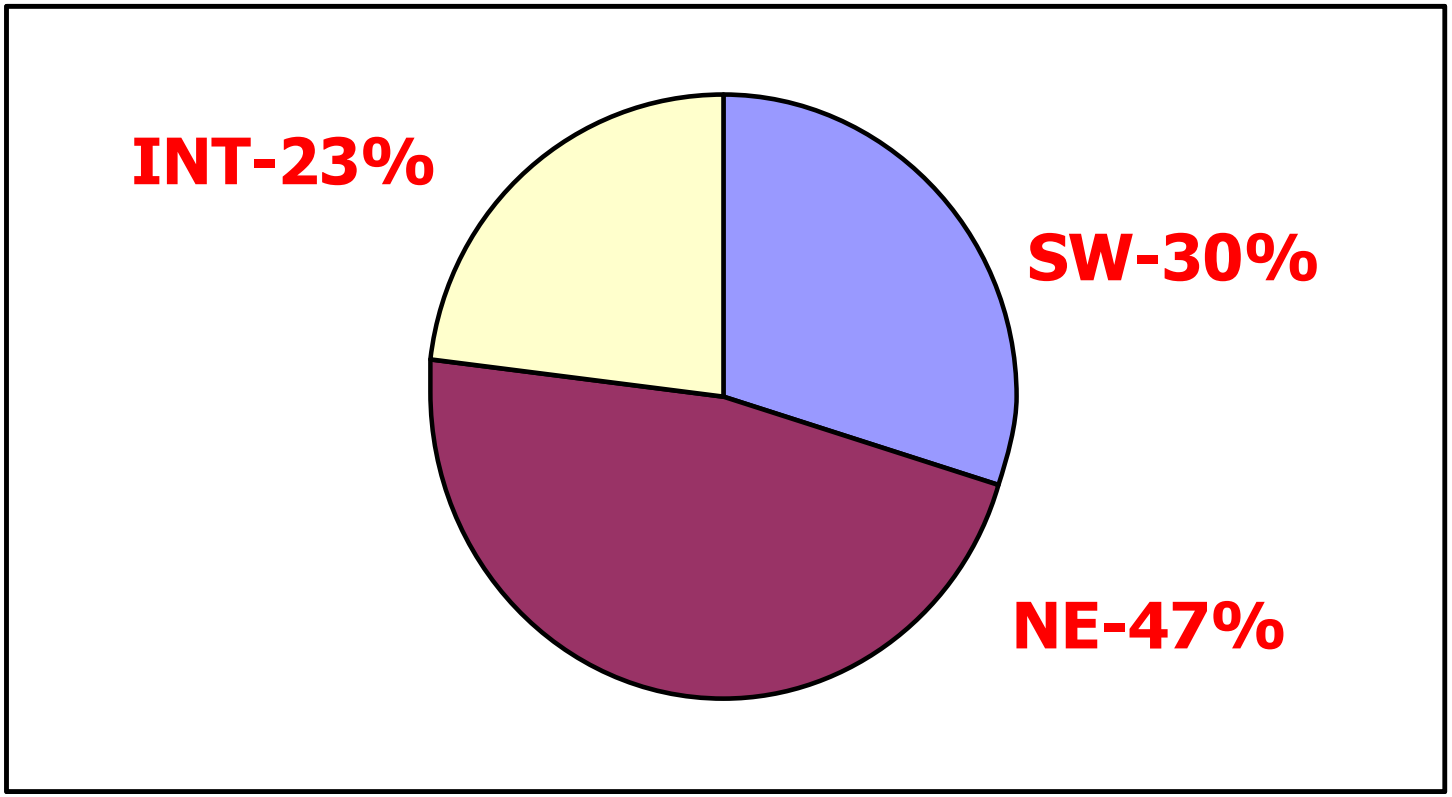
Salient features

- Higher levels of SO_2 and NO_2 during the November-January season (NE monsoon) at both locations indicating that it is not due to local pollution.

(During other months the city site had a higher level of pollution)

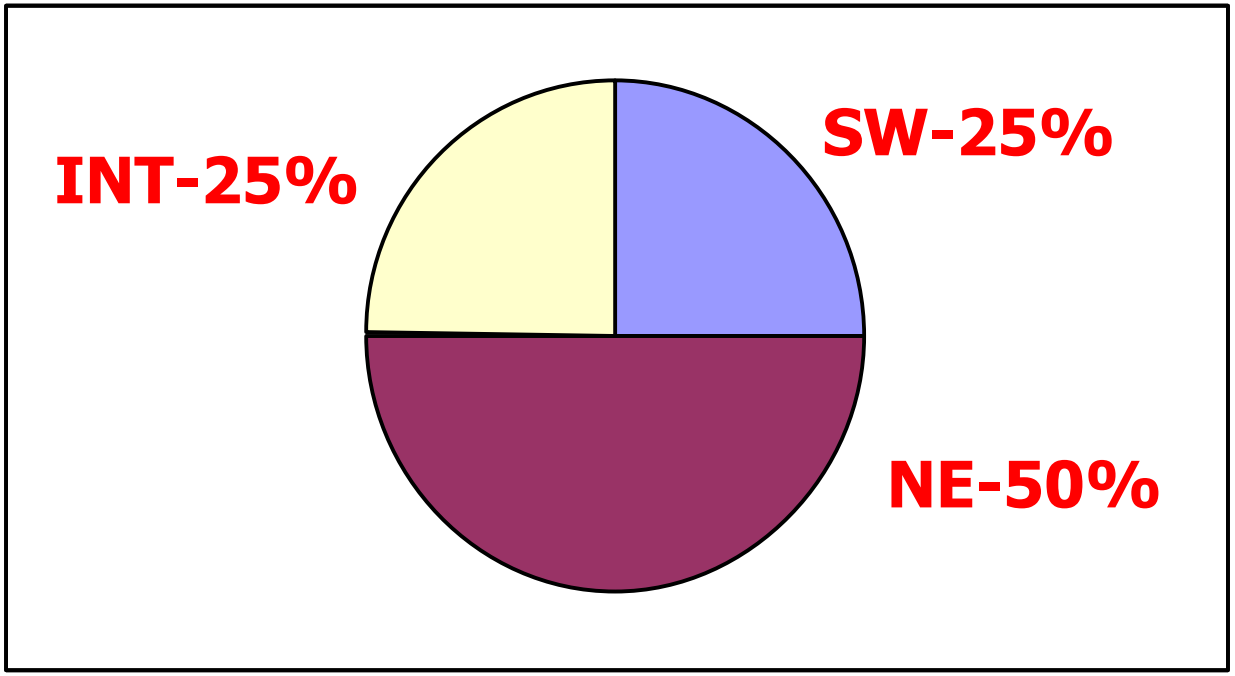
Monsoonal variation of NO_2

Anuradhapura

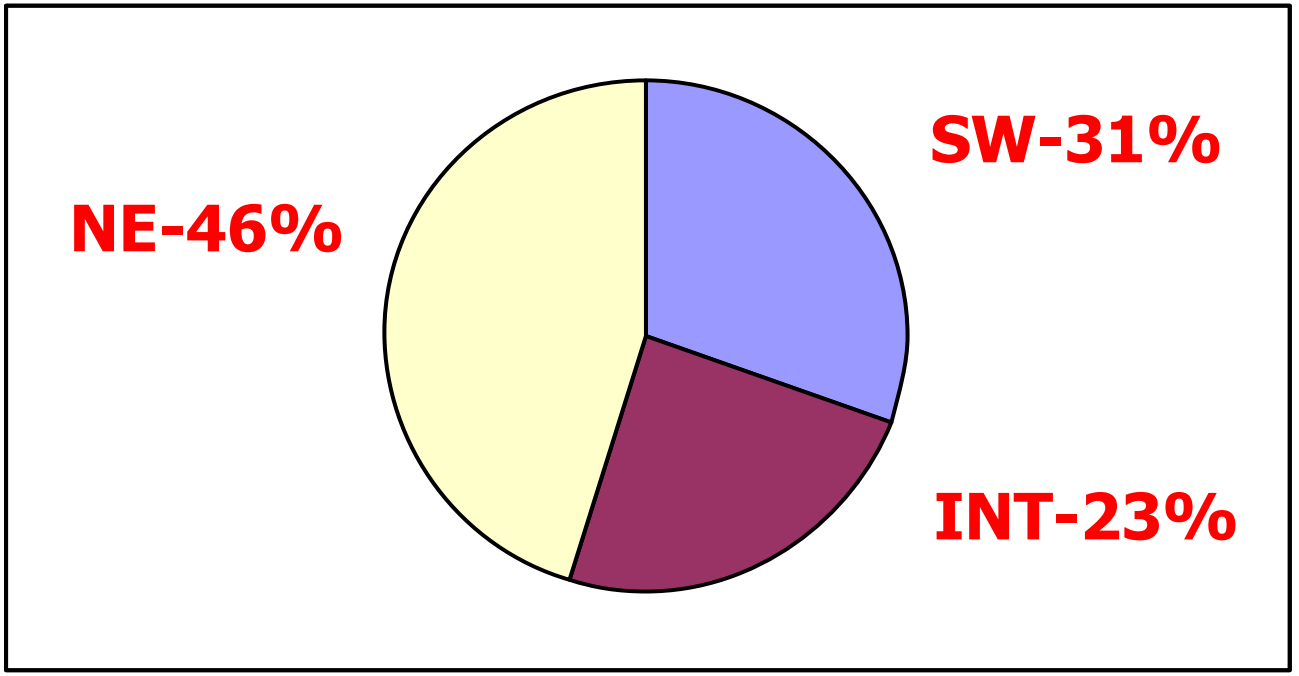


Monsoonal variation of SO_2

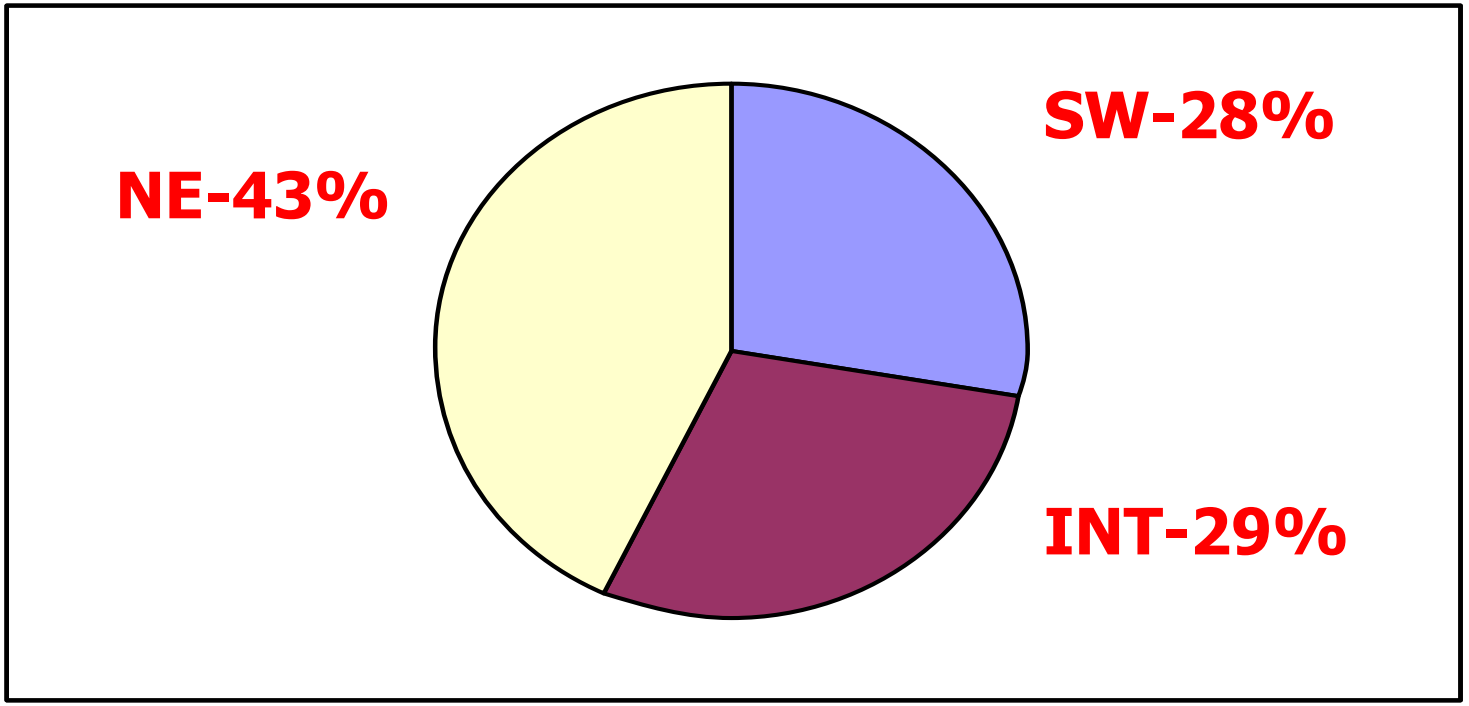
Anuradhapura



Monsoonal variation of SO_2 in Kandy

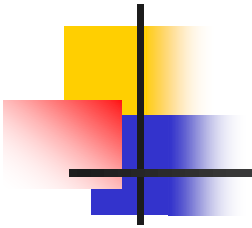


Monsoonal variation of NO_2 in Kandy



Conclusions

- There is evidence to demonstrate transboundary pollution at Anuradhapura during the north-east monsoon



Thank you