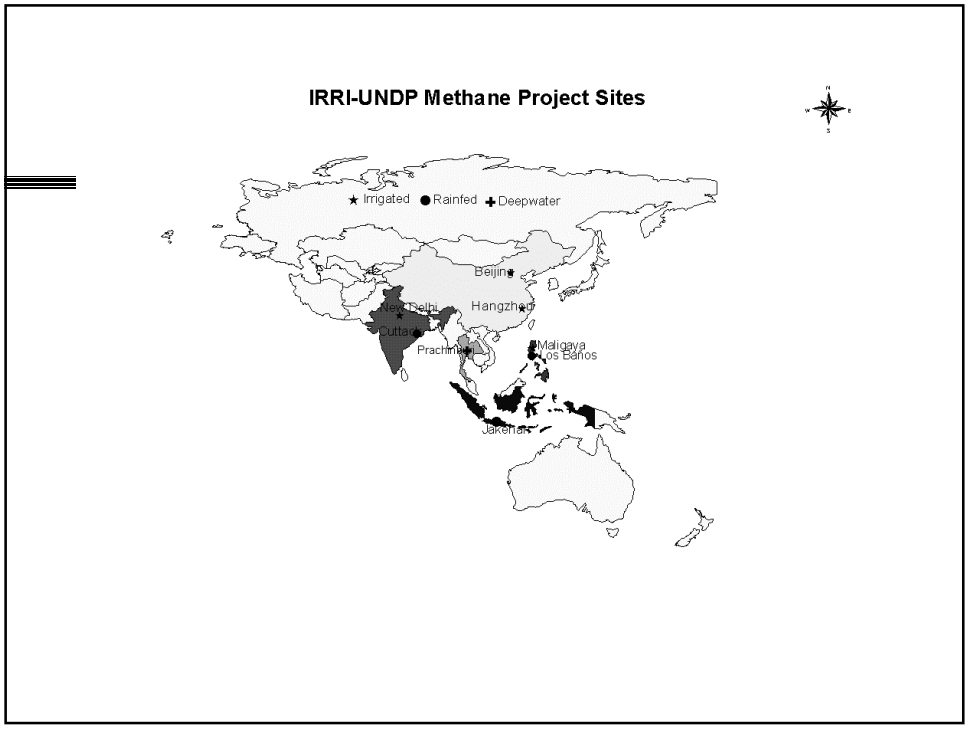
Database on Methane Emissions from Rice Fields

(IRRI-UNDP Methane Project)

Leandro Buendia

Contents

- where and how data are collected (replicability)
- emission patterns (QA/QC)
- controlling factors associated with EF (data to store)
- conclusion & recommendation


IRRI-UNDP Methane Project Sites
Irrigated
Rainfed
Deepwater
Beijing
Hangzhou
Cuttack
Prachinburi
Maligaya
Los Baños
Jakenan

Irrigated Rice

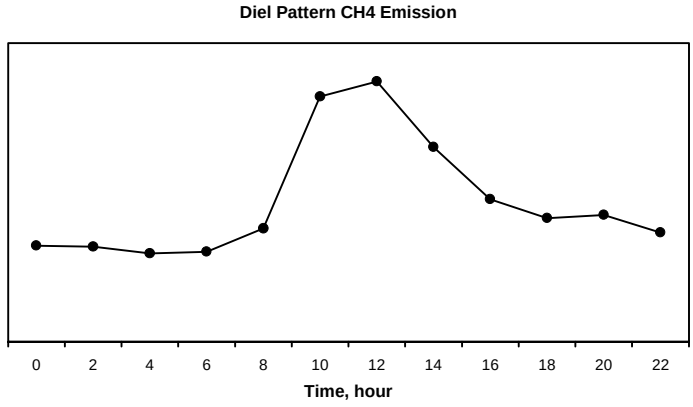
Rainfed Rice

Deepwater Rice

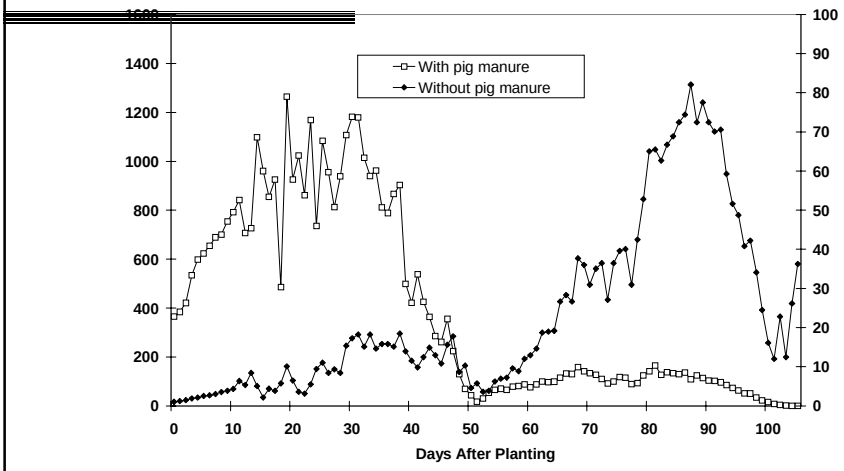
Different Management Practices

- water management
- organic and inorganic amendments
- cultivar
- crop establishment

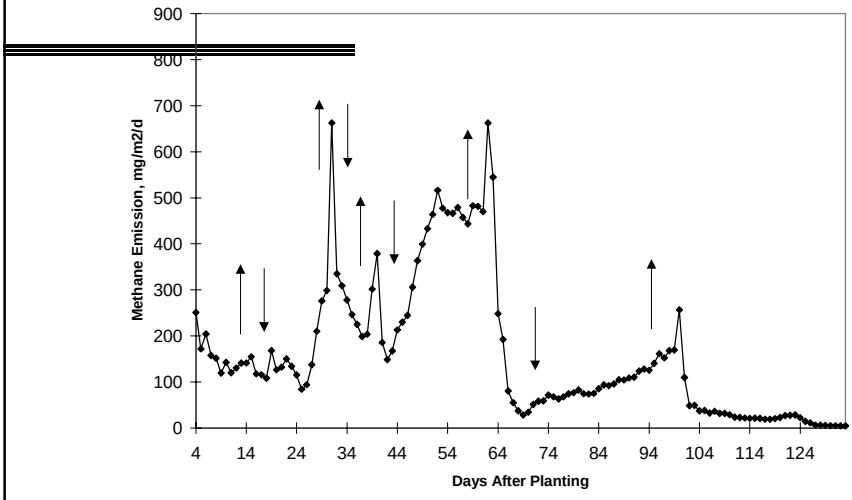
Diel Pattern of Methane Emission



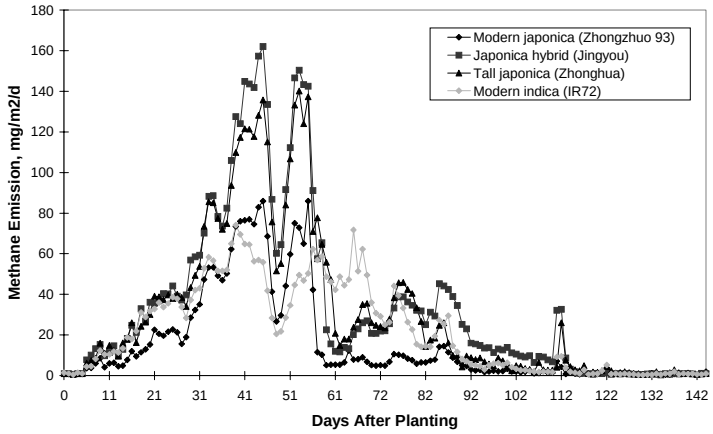
Seasonal pattern of CH_4 Emission as affected by C input



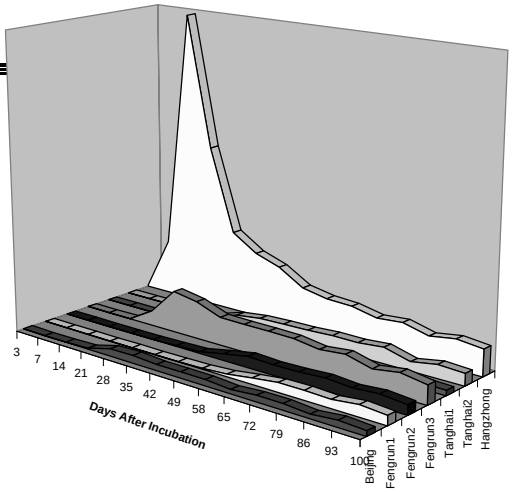
Seasonal pattern of CH_4 Emission as affected by water management

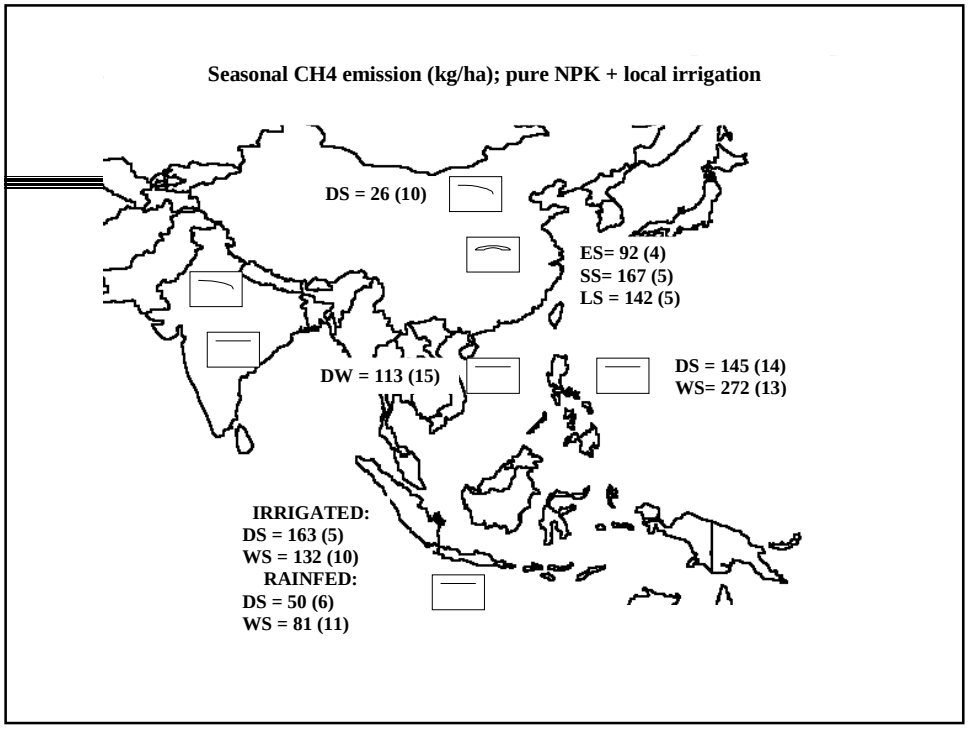


Seasonal pattern of CH_4 Emission as affected by cultivars



Effect of soil type




Seasonal CH4 emission (kg/ha); pure NPK + local irrigation
DS = 26 (10)
ES= 92 (4)
SS= 167 (5)
LS = 142 (5)
DW = 113 (15)
DS = 145 (14)
WS= 272 (13)
IRRIGATED:
DS = 163 (5)
WS = 132 (10)
RAINFED:
DS = 50 (6)
WS = 81 (11)

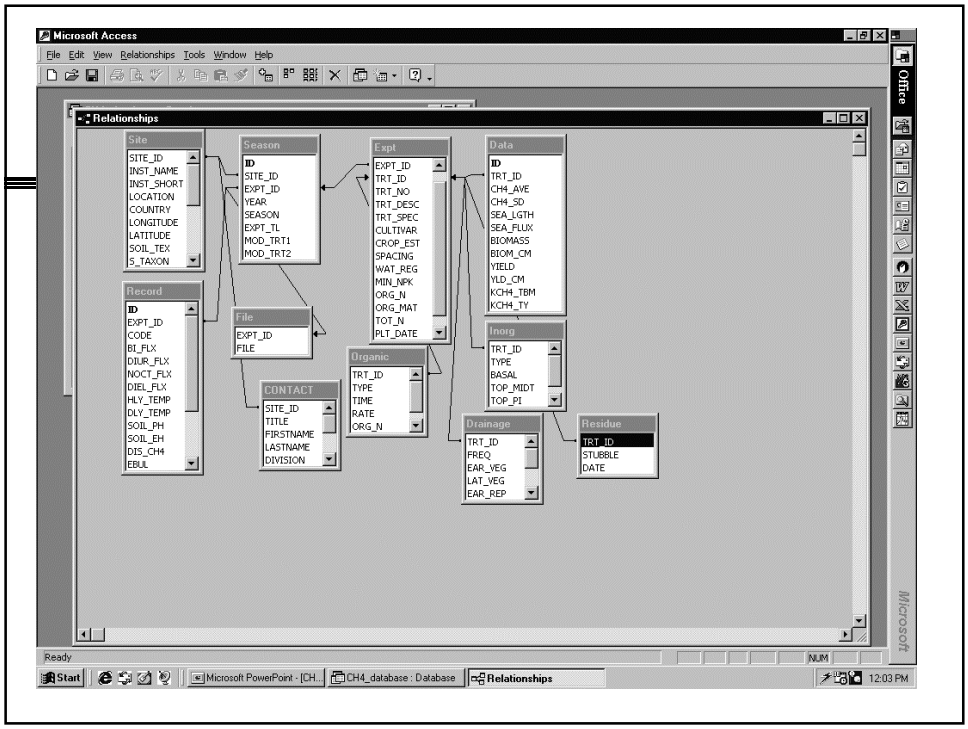
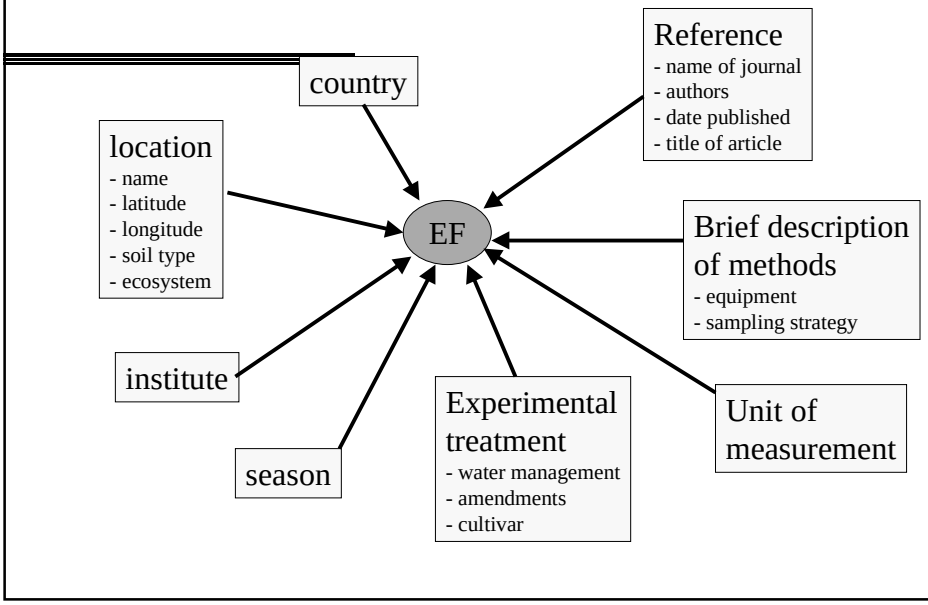

Microsoft Access
File Edit View Relationships Tools Window Help
Relationships
Site
SITE_ID
INST_NAME
INST_SHORT
LOCATION
COUNTRY
LONGITUDE
LATITUDE
SOIL_TEX
S_TAXON
Season
ID
SITE_ID
EXPT_ID
YEAR
SEASON
EXPT_TL
MOD_TRT1
MOD_TRT2
Expt
EXPT_ID
TRT_ID
TRT_NO
TRT_DESC
TRT_SPEC
CULTIVAR
CROP_EST
SPACING
WAT_REG
MIN_NPK
ORG_N
ORG_MAT
TOT_N
PLT_DATE
Data
ID
TRT_ID
CH4_AVE
CH4_SD
SEA_LGTH
SEA_FLUX
BIOMASS
BIOM_CM
YIELD
YLD_CM
KCH4_TBM
KCH4_TY
Record
ID
EXPT_ID
CODE
BI_FLX
DIUR_FLX
NOCT_FLX
DIEL_FLX
HLY_TEMP
DLY_TEMP
SOIL_PH
SOIL_EH
DIS_CH4
EBUL
File
EXPT_ID
FILE
CONTACT
SITE_ID
TITLE
FIRSTNAME
LASTNAME
DIVISION
Organic
TRT_ID
TYPE
TIME
RATE
ORG_N
Inorg
TRT_ID
TYPE
BASAL
TOP_MIDT
TOP_PI
Drainage
TRT_ID
FREQ
EAR_VEG
LAT_VEG
EAR_REP
Residue
TRT_ID
STUBBLE
DATE
Ready
Start
Microsoft PowerPoint - [CH...
CH4_database : Database
Relationships
12:03 PM

Table 4-9 (IPCC Guidelines)
Representative Methane Emissions from Rice Paddy Fields in Various Locations of the World

Country	Location	Range of CH4 flux ($mg/m^2/hr$)	Season total (g/m^2)	Experimental Treatment	Reference
China	Beijing	14.6-48.9	27-91	OM, WM	Chen et al., 1993
	Beijing	1.9-48.9	5.3-100.9	MF, OM, ST, WM	Shao, 1993
	Hangzhou, Zhejiang	6.9-50.6	14-82	MF, OM, SE	Wassmann et al., 1993a
India	Cuttack, Orissa	2.7-7.2	7-19	CU	Mitra, 1992
Indonesia	Taman Bogo, Lampung	18.0-27.1	31-47	MF, OM	Nugroho et al., 1994a
Japan	Ryugasaki	2.8-15.4	11-28	MF, OM	Yagi and Minami, 1990a
Philippines	Los Banos	0.8-18.5	2-42	MF, OM	Neue et al., 1994
Thailand	Ayutthaya	3.3-7.9	13-20	CU, OM,WM	Siriratpiraya, 1990
USA	Crowley, Louisiana	12.6-85.0	22-149	MF, OM, SE	Lindau and Bollich, 1993

Conclusion and Recommendations



References

- Intergovernmental Panel on Climate Change (1997) Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, J.T. Houghton et al. IPCC/OECD/IEA, Paris, France.