Reviewer's comment
The paper by Krishna et al. provides a very large and almost complete data set on DIC concentrations in the estuaries of Indian rivers and the δ13CDIC. The authors use the data to calculate DIC discharge to the Arabian Sea and Bay of Bengal and DIC yields from the catchments. It is a very important and valuable data set collected in 2011 and 2014 and should be published and made available also in the light of ongoing global change affecting the amount and sources of riverine DIC discharged to the ocean basins.

Author's Response
Thank you very much.

Reviewer's comment
In the methods section the authors state that they have done multiple sampling in the estuaries. The standard deviation should be given in Figure 2.

Author's Response
Standard deviation will be given in Figure 2 as you suggested

Reviewer's comment
In the methods the authors indicate that they have DO and chl-a data which they present only in a summarized form in Figures of the paper. These also need to be made available in an attachment.

Author's Response
DO and Chl-a data will be made available in an attachment

Reviewer's comment
The interpretation of the data is rather convoluted and therefore difficult to follow. It needs restructuring and would benefit from one or more tables.

Author's Response
The interpretation (discussion) will be restructured as per your suggestion given in the next sections, and data will be provided in tables

Reviewer's comment
Furthermore, an introduction to the use of $\delta^{13}C_{DIC}$ as an indicator of DIC source is missing. Such information is given in lines 320-337. This could fit into the introduction.

Author's Response
Lines 320-327 will be shifted into the introduction section

Reviewer's comment
Generally chapters 4.1 and 4.2 may be merged if the discussion is organized differently, may be as suggested below. Now some aspects of the $\delta^{13}C_{DIC}$ results are mentioned in 4.1 and 4.2 repeats some of the earlier arguments. In order to better organize the discussion a Table would help showing the average rainfall in the four regions, the volume of discharge per m-2 and soil OC (lines 308 ff). To my mind the last paragraph of chapter 4.1. may rather be the starting point of the discussion.

Author's Response

The structure of the discussion will be modified by considering your suggestions. It will be started with the last paragraph of chapter 4.1, and the chapters 4.1 and 4.2 will be merged, to avoid repetitions, as you suggested. Average rainfall, volume of discharge per m^{-2} and soil OC data will be provided in a separate Table

Reviewer's comment

In general I would suggest to follow a clear structure in the discussion (Chapter 4.1.), discussing consecutively (for example). (Most of these points are already mentioned in lines 237-245):

- dilution effects and mixing effects with sea water (this point may well be discussed in the beginning to exclude certain samples from detailed source discussions using δ13CDIC)
- The impact of rock weathering: carbonate vs. silicates, which rock types dominate the catchment?
- The impact of soil organic matter

Author's Response

The structure of the discussion will be re-organized in three subsections as you suggested. The first will be dedicated to the discussion on dilution and mixing effects, while the second will be dealt with impact of lithology (silicate versus carbonate rock weathering) and the third will be focussed on soil organic matter.

Reviewer's comment

In Schulte et al. I found a very good sketch of the contrasting impacts of these two mechanisms on $\delta^{13}C_{DIC}$ which may provide a helpful concept
- Primary production and respiration in the river/catchment
- possible anthropogenic impacts.
- More points..?

Author's Response

Yes. A very nice schematic it is. We will provide a schematic to explain the influence of different processes on increasing/decreasing the $\delta^{13}C_{DIC}$ in the Indian estuaries

Reviewer's comment

The following collections of data could be given as Tables:
lines 225-233: Table of DIC concentrations selected rivers;
lines 390-396: Table of DIC discharge and
lines 415-418: Table of DIC yields of various regions/rivers.

Author's Response

Data on DIC concentrations (L 225-233), total export (L. 390-396) and yield (L. 415-418) will be provided in the form of tables as you suggested.

Detailed comments:

Reviewer's comment

Line 109ff: the studied rivers are perennial so that there is most probably some discharge during the non-monsoonal months and some of the river catchments may even receive winter

rains so that these sentences have to be formulated a bit differently. The term “monsoonal rivers” is OK but the discharge during the other seasons may be stated as “small”.

Author’s Response
These rivers are not perennial and discharge from upstream rivers will not be there throughout the year. However, there is a small amount of discharge during the winter monsoon and it will be mentioned clearly in the revised submission.

Reviewer’s comment
Lines 177/178: delete sentence

Author’s Response
The sentence will be deleted as you suggested

Reviewer’s comment
Lines 238-245: this is part of an introduction.

Author’s Response
This part will be shifted to an introduction chapter

Reviewer’s comment
Lines 247 ff: the groups of rivers with high, intermediate and small discharges may be indicated.

Author’s Response
The groups of rivers based on their volume of discharge (high, intermediate and small) will be given

Reviewer’s comment
Lines 255-260: this part is redundant, shorten.

Author’s Response
This part will be shortened

Reviewer’s comment
Lines 320-337: introduction, see above. This part and the entire chapter have to be carefully checked. Atmospheric CO2 has a value of -7 to -8 ‰ but dissolved in water; Line 323: this is not clear: CO2 has a δ13C of -7 to -8 ‰ but when dissolved in water it is around 0 ‰ if the main anionis HCO3-

Author’s Response
Here, we meant to say that DIC originated by dissolution of atmospheric CO_2 (-7 to -8‰) is close to 0‰. We realized that it was presented wrongly. It will be corrected in the revision.

Reviewer’s comment
Chapter 4.4 may be substantially shortened and I would suggest to shift the discussion on the source of DIC to the earlier chapter 4.1.

Author's Response

As we mentioned above, the discussion related to sources of DIC, for example, lithology, in this chapter will be shifted to chapter 4.1. The discussion on yield of DIC will be shortened and will be given in a paragraph.

Reviewer's comment

Lines 440ff is this contradicting the earlier discussion that groundwater is low in the SW and that this substantially is responsible for low concentrations?

Author's Response

Here, we mean to say that higher yield of DIC from SW estuaries may not be due to large contribution from ground water as their concentration were found to low than the other Indian estuaries of NW, SW and NE region. However, to obtain the clarity these two sections will be modified.

Reviewer's comment

Lines 450ff: the whole discussion on lithology could also be better in chapter 4.1.
May be a shorter discussion on the reason for the different yields (sediment/rock types and elevation; dams) would be sufficient.

Author's Response

The discussion on lithology will be shifted to chapter 4.1 as you suggested. Also, the main reasons for different yields (rock type, dams and soils organic matter) will be provided in a short paragraph.

Reviewer's comment

The authors promise to send the data on request by E Mail. However, they should be made available in a data bank or as an attachment to the paper.

Author's Response

Data is accessible through the website of our Institute's data centre (http://www.nio.org/iodc)

Reviewer's comment

The abstract is quite good and may be retained even after changing the discussion. Likewise, changes of the summary would be also rather small after a revision.

Author's Response

Thank you. Summary will be refined.